VOL. CCVIII, No. 2719

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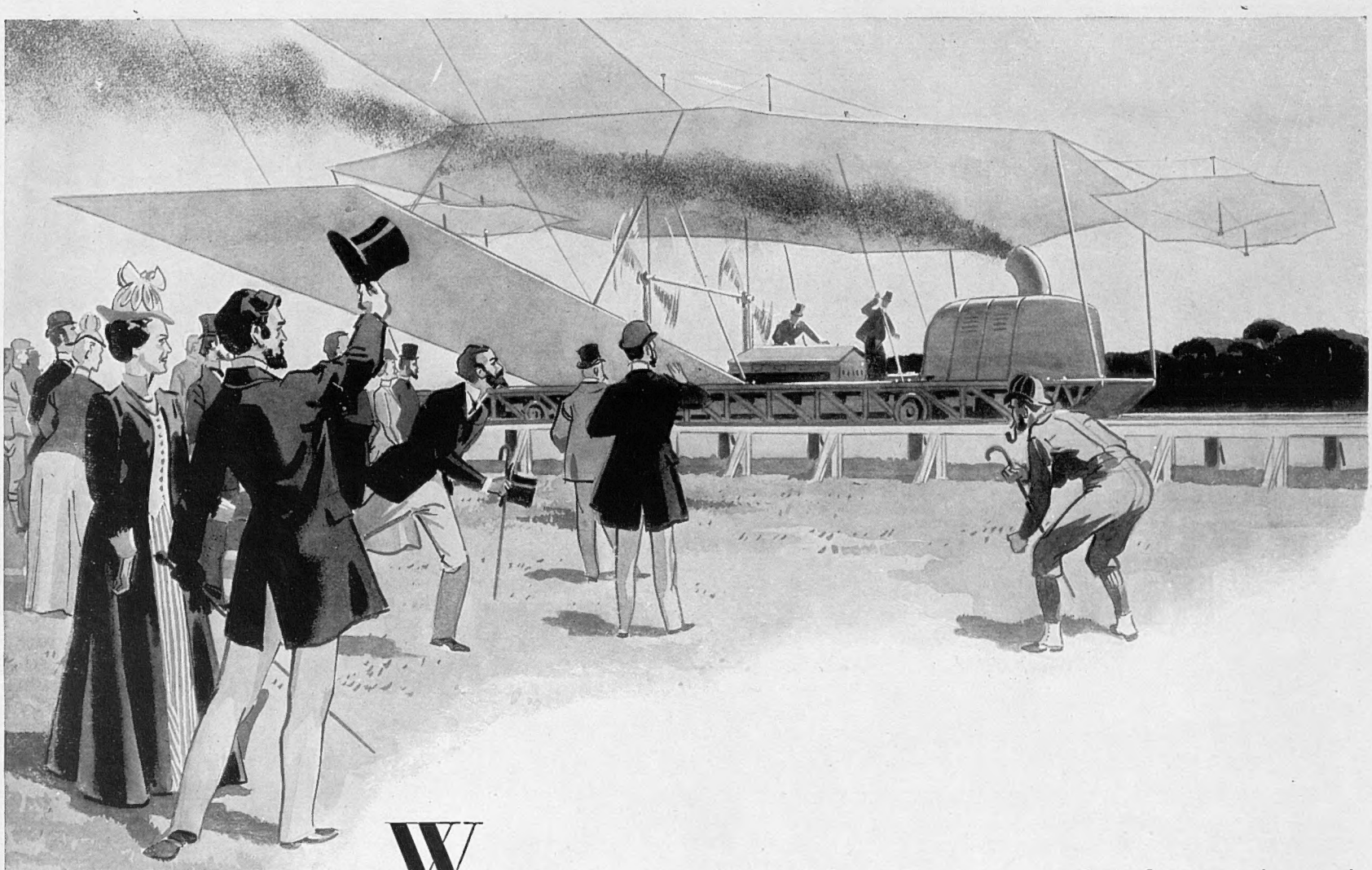
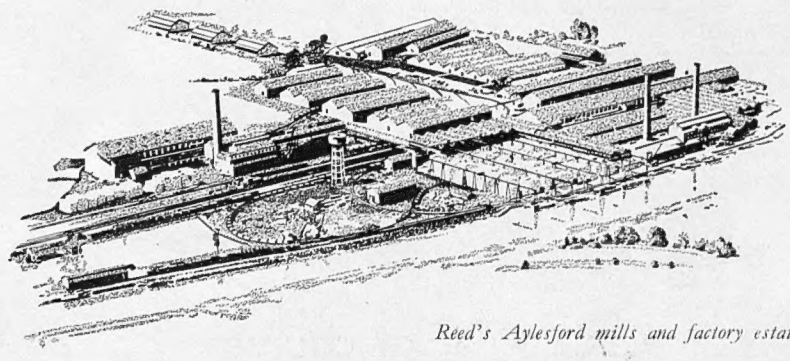


Scene reconstructed by Roy Carnon

WHAT DISAPPOINTMENTS dogged the early aviators in their first experiments in flying. Many worked in secret ; few were so ambitious as Sir Hiram Maxim who in 1894, testing his machine at Baldwyns Park in Kent, coaxed sufficient power from a light marine steam engine to lift the whole contraption off the rails. There his endeavours ceased and who would have thought that in less than 60 years men would be flying at speeds faster than sound ? Who, indeed, could have foreseen the great industries which would arise from the inventive genius of the 1890's ? In that same year, 1894, Albert Edwin Reed acquired his first paper mill at Tovil near Maidstone, to lay the foundation of what is today one of the largest organisations of its kind in the world. He was outstanding among the pioneers of modern paper-making methods and from his vision and enterprise have grown the great Aylesford mills of the Reed Paper Group, where giant high-speed machines turn out mile after mile of newsprint and the tough Kraft paper which has entirely revolutionised this country's packaging methods.



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Volume CCVIII No. 2719 The SPHERE, London, March 22, 1952

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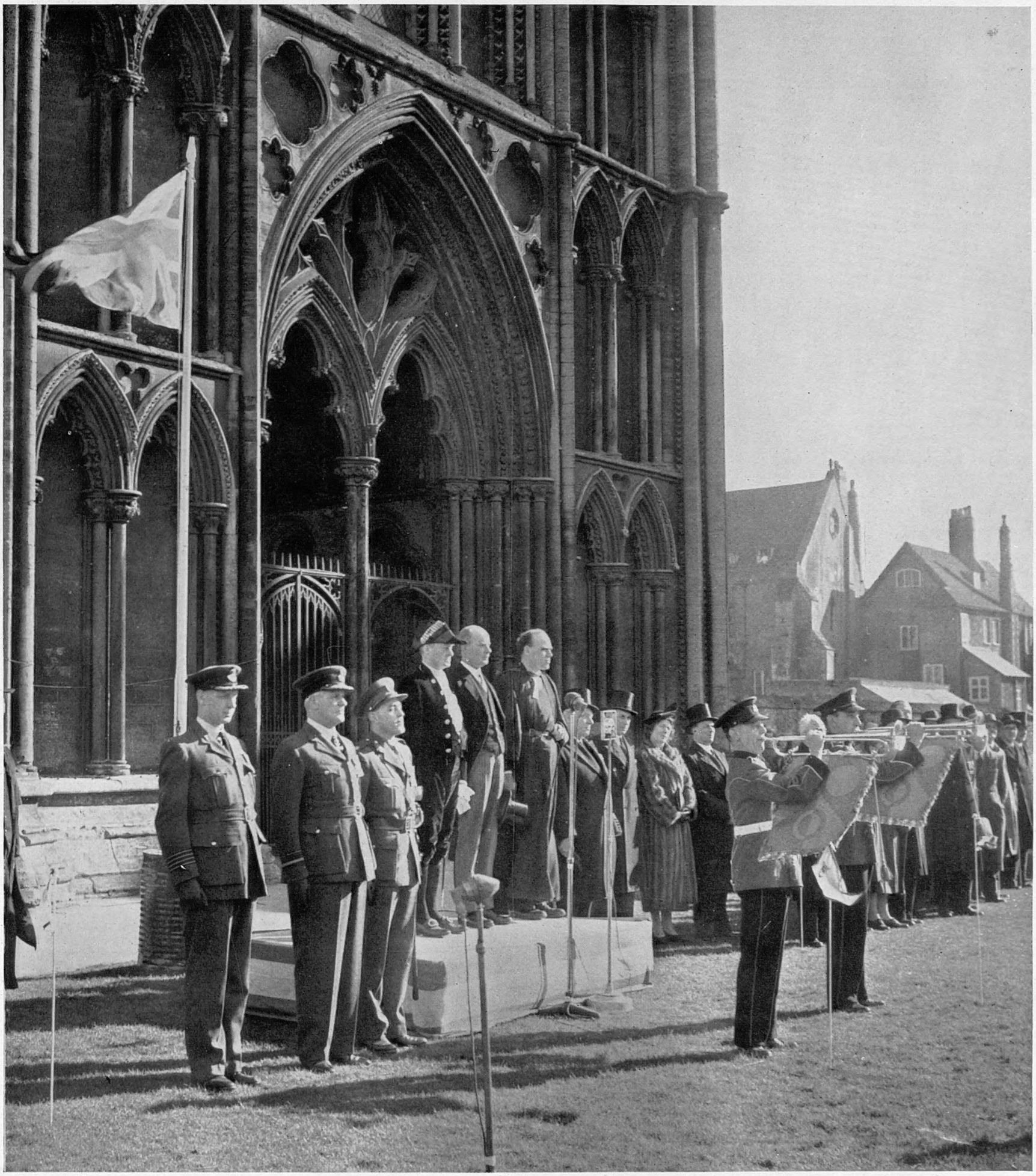

PROCLAIMING QUEEN ELIZABETH II—AFTER FIVE WEEKS' DELAY; LAST SATURDAY'S CEREMONY OUTSIDE ELY CATHEDRAL WHEN THE HIGH SHERIFF OF CAMBRIDGESHIRE AND HUNTINGDONSHIRE MADE THE PROCLAMATION: Two trumpeters of the Territorial Army are seen blowing a fanfare in front of the dais outside the Cathedral. The Sheriff wore the traditional black velvet knee breeches, a silk cravat, and buckled shoes.

Because there was no proclamation of the Queen's accession in the City of Ely, sixty-five prominent citizens banded together to send a petition to the urban district council expressing their grave dissatisfaction because of the omission. The result of the petition was last Saturday's colourful proclamation ceremony in Ely. The High Sheriff of Cambridgeshire and Huntingdonshire, Mr. W. H. Ockleston, was preceded along the crowd-lined streets by Cambridgeshire Deputy-Lieutenants, the Under-Sheriff and the Sheriff Chaplain. Then came the fanfare of the trumpeters in front of the dais erected outside Ely's ancient Cathedral, and the Sheriff then proceeded to make good the omission which had aroused the ire of sixty-five citizens, causing them to believe that a slur had been cast upon their city of more than 1,000 years of heritage. It appears that at the time of the original proclamation, Ely had been passed over in favour of March, the seat of the Isle of Ely Council.

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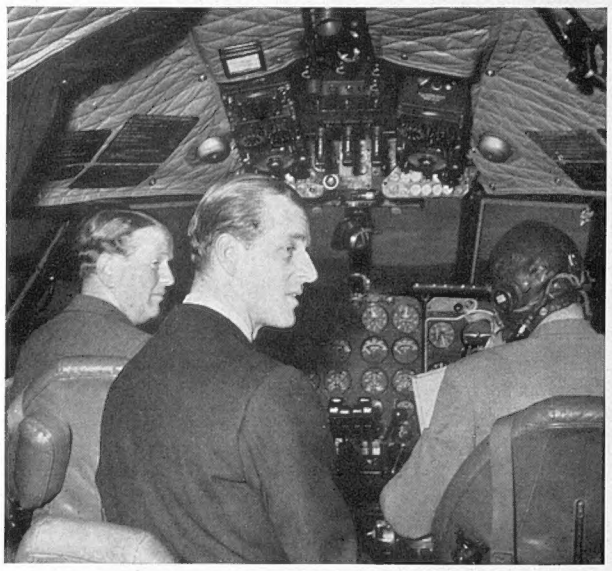
THE DUKE RIDES IN A DE HAVILLAND COMET



THE DUKE OF EDINBURGH MAKES HIS FIRST FLIGHT IN A JET AIRCRAFT : The Duke, seen seated behind test pilot John Cunningham (left), in the cockpit of the de Havilland Comet in which he made a flight over the English Channel last week, travelling at 500 m.p.h. at a height of 40,000 ft. He was making his first flight in a jet aircraft, one of the de Havilland Comet series of passenger airliners which the British Overseas Airways Corporation is to introduce on its South African service in May.

THE JOLLY ROGER OF "THE LORDS"

LONDON PRACTICAL JOKERS AT WORK : One night last week they hoisted the Jolly Roger on the flag-pole of the 336-ft. Victoria Tower of the House of Lords ; officials removed the offending emblem by 8 a.m. The jokers had a tricky climb up twenty-one ladders, each of thirty-five rungs, to get to the top of the Tower. The last time a similar joke was played, a policeman's helmet was hung from the top. It is believed that University students were responsible for this latest exploit at Westminster.

ANNIVERSARY OF THE PAPAL CORONATION

LEAVING BROMPTON ORATORY AFTER THE PONTIFICAL HIGH MASS : Lord Sempill (in kilt) leading the way from the Oratory, followed by the Apostolic Delegate, Archbishop William Godfrey, after the latter had celebrated Mass to commemorate the anniversary of the Coronation of Pope Pius XII. Archbishop Edward Myers was present in the Sanctuary, together with domestic prelates and privy chamberlains of the Pope. Many Ambassadors, Ministers and other members of the Diplomatic Corps attended, with Commonwealth High Commissioners and Agents-General.

A London Newsletter

195-198, STRAND, W.C.2.

Pre-Budget Guesses.—Waiting for Mr. Butler's bomb explosion on the eve of Budget day, I asked myself what would a dictator of absolute power and absolute courage do ? One who could crush any minority revolt, had no party strategy to consider and knew that he could work his will on the whole nation. He would see the nation's plight, its vices and its virtues, precisely as if it were an individual's plight and character. He would apply the simple remedies which a man who found himself on the verge of bankruptcy, largely through his own fault, would apply to restore himself and his family to solvency and self-respect. He would work harder, cut down on unnecessary luxuries, give up gambling and theatre-going and social delights, cut down his staff and find his recreation and his soul in honest hard work. On that basis, Mr. Butler would lay his axe at the root of our whole absurd and elaborate system of bureaucracy and committee work. He would so handle industry that one man would do a man's job (and not three or four) : he would tax pools, racing tracks, football, American films, tobacco, spirits, and all obviously luxury devices out of existence and would offer to every man and woman who had done a good fifty-hour week's work in mine, factory or field the recreation of an honest week-end digging in his back garden or taking a walk in the parks or round the picture galleries. He would call his programme for salvation not an austerity plan, but a plan for the salvation of souls and bodies and the body politic. He would bomb out our national hypocrisy and rottenness and build anew on biblical or even cave-man foundations. But I doubted if Mr. Butler so much as saw that vision, so realistic and so absurd. I was in no doubt at all that his remedies could not be even a modification of that tremendous idea of the rebirth of a nation. For England 1952 is not John Smith 1952. England 1952 is not a composite figure of flesh and blood—50,000,000 John Smiths. It is a vast robot, loaded like a madman's dream of a Christmas-tree, wired and cross-wired for electric lighting displays, stretching and twining its innumerable branches and festoons across space and to the skies and its roots into the earth's bowels.

What the Butler Saw.—What Mr. Butler saw clearly was that he is not a dictator, all-powerful and above party, and that accordingly he could not treat the nation as if it were John Smith and apply simple and honest and common-sense remedies. His Budget was a bombshell ; not a hint had leaked out and his triumphant first Budget speech not only relieved and pleased the nation, but silenced the Opposition for the moment. For he had the courage and the vision to initiate a new principle in post-war taxation. He slammed the door on Bleak House and offered every worker a chance to climb the lower slopes of the delectable mountains. The measure of his courage is revealed in his decision to cut food subsidies by almost 50 per cent., and of his success as a persuasive and lucid Chancellor by his ability to retain his seat in the saddle after jumping that Becher's Brook. The catcalls and hoots of Opposition died down immediately after he had detailed his designs to return half the money so saved to those most likely to be hit by higher food prices. Increases in the children's allowances, the release from any direct taxation of 2,000,000 more lower-scale earners, certain pensions to enjoy the reliefs of earned income. These and other concessions made to the hardest hit, without reduction in the top levels of income or super-tax, will go far to stifle and even to refute the charges of a "class" Budget. Hard cases there are bound to be. Some may be adjustable. And anomalies and contradictions of recent official policy will be easily found and fiercely exploited. Only the other day, as I supposed, the one thing needful in industry (apart from harder work and restraint in wage claims) was the installation of new plant and modern machinery. Now it seems such investment of profits or borrowed capital is frowned on and indefinitely deferred. That, on the face of it, is a mighty *volte-face*. It suggests a very short-term and emergency policy.

A Budget of Hope.—But Mr. Butler's Budget is unquestionably a great one, a great advance, a breaking of new ground, a welcome departure from decades of tinkering and patching and deferring. It is a Budget of vision, of courage, of constructive thinking, a Budget of Hope. If hopes are sometimes dupes, fear may be liars. For months the Government has made our flesh creep over what Mr. Butler would bring out of his red despatch-box. It would be a tiger, not a rabbit. It is neither the one nor the other. It is not impossible that he has found a nostrum. But we all require time to study his plans in their entirety. They have been delivered piecemeal and the jigsaw must now be blocked in. And among the Pacunæ which I must fill in is the fulfilment of the Tories' firm promise to cut Civil Service expenditure by a really large percentage. Has that been done ? What is the net figure in terms of millions ? Are we on the road to a simplification of administration in central and local government ? Are we on the way to lay the axe at the roots of government by innumerable redundant committees and hordes of redundant staffs serving those committees ? I see no signs of that reform. There is also a consideration concerning the new tax on petroleum which will undoubtedly be ventilated—its effect on the large body of voluntary workers who carry out so much of the nation's necessary labours. Only a few types receive allowances for their journeys which, whether taken in public or private vehicles, have long been expensive items. In rural areas a forty-mile journey to and fro is not exceptional for the conclusion of a job which may be a twice-weekly affair. But if that particular voluntary chore is to cost the worker £50 a year in petrol alone, it is certain that some of his kind will come to the conclusion that altruism can be carried too far, to the verge of bankruptcy.

GLASGOW'S UNRULY FOOTBALL TICKET QUEUE

MOUNTED AND FOOT POLICE ATTEMPTING TO DEAL WITH THE SOCCER WHO STAMPEDED : The stampede occurred outside Hampden Park ball stadium, Glasgow, in the queue waiting for tickets for the Scot England International match. Women were trampled by the crowd. were thrown against the horses' legs, others against barriers. the centre of the struggling mass came screams and cries for Police trying to slow the rush were swept aside. People at the of the queue dashed across the car park towards the front. Emerg calls for reinforcements went out to every police station in Gla

Opposition at its Lowest.—Mr. Gaitskell's broadcast attack on the Budget left a painful impression on my mind. If I were an out-and-out Tory, I dare say I should have rejoiced that the Socialists have so little constructive criticism of the Budget that they must fall back on the inevitable cry of class-prejudice and declare that Mr. Butler is grinding the faces of the poor ; I should have been glad that his attack was such a complete and dismal fiasco and that his strategy was so patently clumsy and unreal. But I got no satisfaction from his arguments. Rather, it depressed me to think that the Opposition Front Bench still is not ashamed, in the country's need, to fall back on this foolish, sorry cry of betraying the poor and favouring the rich and thus of keeping "a mournful feud alive that else had died" ; and that a man educated as Mr. Gaitskell has been, should, at a time like this, by clumsy and yet deliberate innuendo "incite to mutiny" the less balanced and patriotic supporters of Socialism. We are all for a healthy and constructive opposition in Parliament and on the platforms. But such opposition should at least wear a semblance of patriotism and not stand forth as naked partisanship. It is shocking to realise that Socialism in opposition has no use for the panache of patriotism which it assumes in office and is quite prepared, for its own ends, and in default of a constructive policy, to unleash the dogs of civil strife.

Great Conservatives.—The Conservative Party has begun an intensive drive towards political education with a series of lectures on great political figures and institutions. For the City of London's education they have chosen to discourse on several great Conservative leaders. They have chosen Disraeli, Lord Randolph, Joseph and Neville Chamberlain and Baldwin. These will be presented by men who know a good deal about them. Will the City ask : "Is this the *best* Conservative claret, Mary ?" And will the organisers answer : "The best you 've *got*, Sir." For the times we live in, with quite recent events still fresh and sore in our memories, I should myself have regarded Pitt as a better model than Neville C. or Baldwin. I should have hesitated to include Lord Randolph on the score of his somewhat amateur status as a spielman in the game of privilege that politics were in his day. Joseph C. is perhaps a sound choice.

since his great ideas are not yet all dry bones, but even "Dizzy's" achievements have not all of them proved very enduring. His primroses still bloom in season, but the jewels on his crown of India are dimmed. Still, "Dizzy" could hardly be left out, though politics in his day were still a privileged game. But the lecturers on Neville C. and Stanley B. (Mr. Elliot and Mr. Berkeley) will have to work hard on their briefs if they are to win adherents to Conservatism on he records (as assessed to-day) of these two recent Tory premiers. Luckily, there is no accepted definition of greatness.

Committee on Committee.—My own limited experience of local government convinces me that we, as a nation, are all still incurably mad together. I see hardly a sign that the crisis in our national affairs, our tottering on the verge of bankruptcy, has penetrated within the walls of the county halls, panelled in rare woods and superbly furnished. Every county council must vie with Whitehall in splendour and use as much paper as the Home Office. And even now, by orders from Whitehall, committee is superimposed on committee, with powers to appoint and pay permanent staffs "as seem fitting." The now organising Magistrates' Courts Committees are already shortly to give birth to another child, and no one suggests from the top that perhaps it were better to postpone for a while these new and desirable toys. For a very long time the monstrous waste in time, clerical work and personnel of the Standing Joint Committees of Counties has festered in my mind. Once a quarter about thirty persons are summoned from across the county to attend a two-hour meeting on a huge agenda. Among the thirty are magistrates from the Petty Sessional Divisions. Will the new Magistrates' Courts Committees release these J.P.s from the Standing Joint, taking over all the Petty Sessional questions formerly dealt with by the Standing Joint? We shall see. My guess is that it will not. In this country committees breed like rabbits. Gassing is what they thrive on. A sane man, if such existed, would cry aloud that nothing to-day could justify any new committee, and that all wasteful or semi-wasteful local government committees should be suspended as a gesture, as a token contribution to national economy.

The Blues.—The Boat Race deserves to be a popular show still, after all these years; and despite the counter-attractions of T.V., cinemas, radio, dog-tracks and what not, it still is so. It convinces me that as a nation we are still capable of appreciating and honouring guts and a willingness to strive for a crown of laurels, and not of dollars. But how those eighteen men and their coaches and companions can be annually recruited for the long trial still amazes me. The river between Putney and Mortlake is not beautiful in March, nor is it snug. On the contrary, it is chill and dreary to a degree. Oxford already have been on that icy reach for a fortnight, and will be there for another fortnight, training for, I fear, certain defeat. A Boat Race is not everybody's cup of tea, even cold tea. It lacks incident or thrill for the layman and landsman, except when the boats capsize, as sometimes they do. But you can't even bank on that. To watch a Boat Race for a ¼-hour bores me indescribably. Imagine six weeks of working, eating, talking, sleeping, dreaming *Boat Race* at the evillest time of year, on the ugliest reach of a river in an ugly suburb, with the same handful of heroic companions . . . and if imagination does not boggle, you get an idea of the *nobility* of that sacrifice of freedom for a crown of simple bays. Yes, it is right that we should make Boat Race day a popular festival.

Business at Panmunjom.—I puzzle over the Panmunjom "talks." I try to find a reasonable cause for the extraordinary patience of the Western delegates. I am told that they continue these apparently absurd negotiations (which advance a foot only to recede 12 inches) month after weary month because of the possibility, based on memories of Gromyko tactics, that at long last Communists sometimes make "sudden and unexpected shifts in their tactics." This possibility in my view is based on very vague memories and on very slender grounds and hopes. Common sense suggests to me that Western patience at the futilities of Panmunjom are due to quite another cause, not to a vague hope of a miracle but a substantial distaste for the equally futile fighting. For months on end this destructive war has been kept in cold storage, waged in gesture raids and adjustment diversions; and so it has cost the United Nations considerably less in human lives and even in money. And domestic criticism within the nations concerned has died down. And *that* the delegates of U.N. have for a long time regarded as "something gained." But if the possibility of a miracle change of heart by the Communists is fantastically remote, then the marking of time is a short-sighted and fantastically dangerous policy. For while the "truce" lasts, the Communists for ever build up their strength in men, arms, airfields and air-power, and week by week the U.N. forces lose the will to continue a struggle they detest. The business at Panmunjom is dangerous. THE OLD STAGER

IN NEXT WEEK'S ISSUE

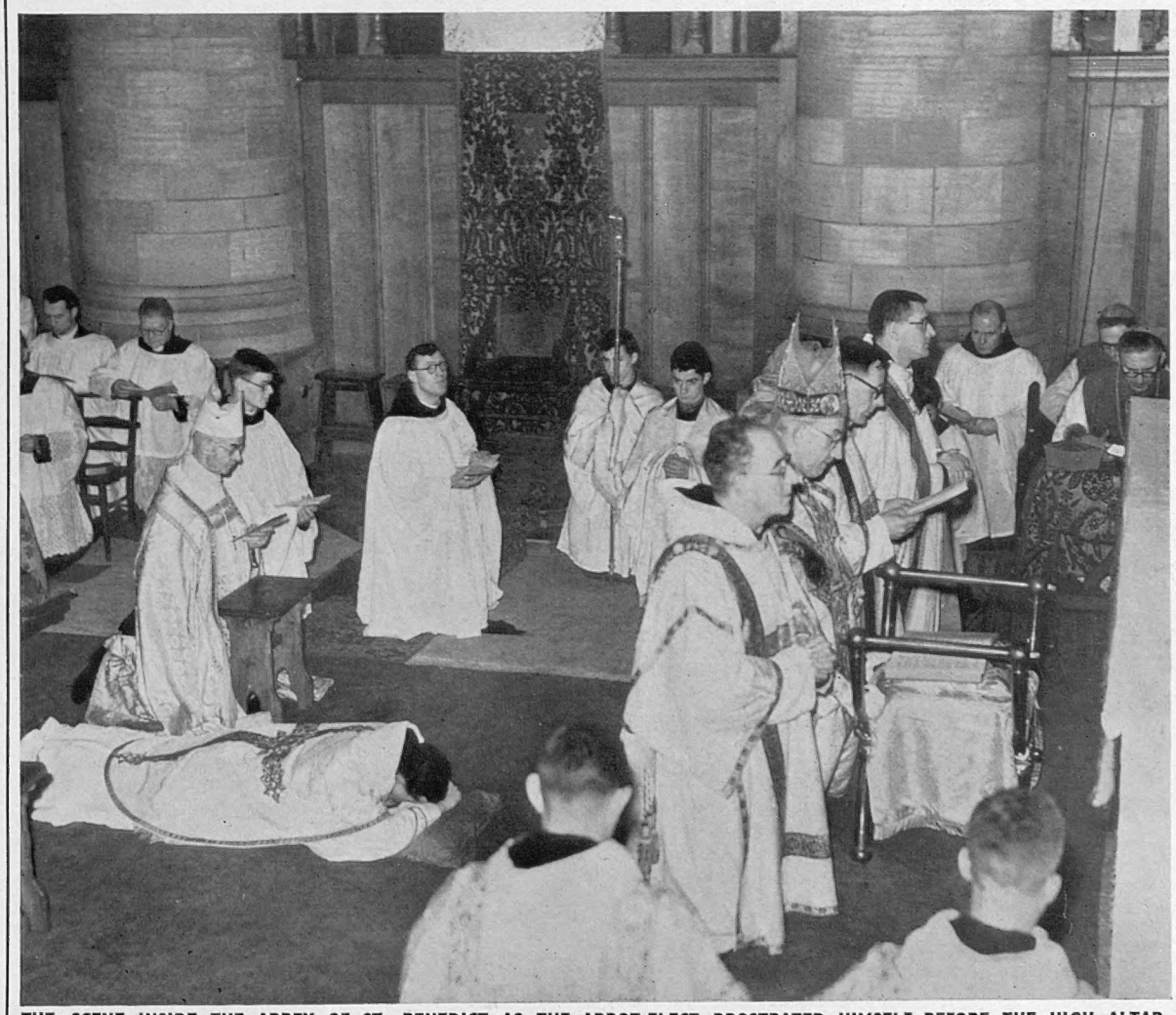
THE RACE FOR THE GRAND NATIONAL

by John Hislop, Brian Vesey-Fitzgerald and "Snaffles"

With Drawings, Diagrams and Maps Relating to the Race

THE BLESSING AND ENTHRONEMENT OF THE NEW ABBOT OF FORT AUGUSTUS, INVERNESS

THE NEWLY-ENTHRONED ABBOT OF FORT AUGUSTUS, NEAR FORT WILLIAM, SCOTLAND, WITH OTHER ROMAN CATHOLIC BISHOPS AFTER THE CEREMONY INSIDE THE BENEDICTINE ABBEY: The new Abbot, the Rt. Rev. John Oswald Eaves, with pastoral staff in hand and vested in chasuble and mitre, is seated in the centre of the group. On his left is Bishop Walsh, of Aberdeen, who officiated at the service and placed the mitre on the new Abbot's head, and on his right is Archbishop Gordon Gray, of Edinburgh. Among the other members of the Scottish Roman Catholic hierarchy seated in the front row are Archbishop Donald Campbell, of Glasgow; Bishop James Scanlan, of Dunkeld; Bishop Kenneth Grant, of Argyll and the Isles; Bishop James Black, of Paisley, and Bishop Edward Douglas, of Motherwell. Other dignitaries present at the ceremony included Abbot Anselm Lightbound, of Belmont, Herefordshire; Abbot Columban Mulcahy, of Nunrow Abbey, Roxburghshire; Monsignor Cuthbert Chase, Edinburgh; Monsignor James Ward, Glasgow; Monsignor John MacNeil, Argyll and the Isles, and Monsignor William MacMaster, Fort William. Over fifty priests, including representatives of various religious orders in Scotland and England, also attended. The Rt. Rev. J. O. Eaves is the fifth and youngest Abbot since the Abbey's foundation in 1882. The fort was originally built in 1716 and after various transactions was purchased by Lord Lovat, who in 1876 presented it to the Benedictines. From then until 1882 it was used as a monastery, with college, hospital and scriptorium attached. The present Lord Lovat, grandson of the donor, took part in the enthronement ceremony. It was his duty to carry one of the two wine barrels which, together with two candles and two loaves of bread, were presented to the officiating Bishop by the new Abbot.



THE SCENE INSIDE THE ABBEY OF ST. BENEDICT AS THE ABBOT-ELECT PROSTRATED HIMSELF BEFORE THE HIGH ALTAR: The ceremony for the blessing of a mitred Abbot is similar in form to that used for the consecration of a Roman Catholic Bishop. The Prelate kneeling at the faldstool is the Roman Catholic Bishop of Aberdeen. During the ceremony the new Abbot was attended by Abbot Byrne, of Ampleforth, and Abbot Knowles, his predecessor. Abbot Eaves, well known in educational circles in the east of Scotland, was born in Preston forty-two years ago. Before his election he was headmaster of St. Andrew's Preparatory School, Carlekemp, North Berwick. It was during the school's stay at Fort Augustus in the early years of the war that Abbot Eaves conceived the idea of Air Scouts—a suggestion which gained the approval of the Boy Scout Headquarters and the Air Ministry. The community at Fort Augustus numbers sixty.

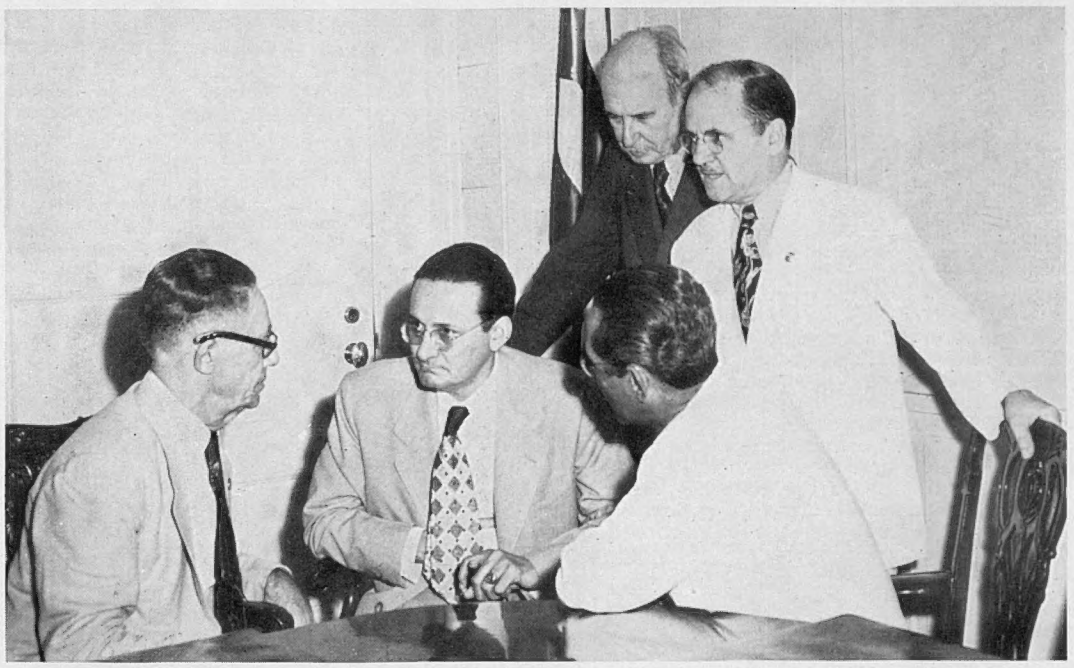
GENERAL FULGENCIO BATISTA PRESIDING OVER HIS FIRST CABINET MEETING IN HAVANA AFTER HE HAD SEIZED POWER IN AN ALMOST BLOODLESS REVOLUTION LASTING SEVENTY-SEVEN MINUTES: The General is seen seated at the head of the table surrounded by his aides. Batista has said that as Chief of State and as Premier he will rule the nation with his Council of Ministers. Wearing a white linen suit and a bright tie, the smiling, stocky leader arrived in Havana from Camp Columbia with a motor-cycle escort. In a hoarse voice, resulting from lack of sleep, the General addressed the people over a national radio hook-up.

Cuba swiftly returned to normal after the Batista coup, and within twenty-four hours of the overthrow of President Socarras the new Cabinet was at work. Batista, as Chief of State, let it be known that the Cuban Congress was suspended and that the Legislative power would be exercised by a Council of Ministers. The members of Congress would continue to draw salaries, however.

Meanwhile from Mexico City, where the ousted President Socarras took refuge with his family, their came a determined statement of the will to fight back. Expressing concern for the future of Cuba, Dr. Prio Socarras said the rhythm of a twenty-year struggle to establish an institutional government had been shattered in the revolution "by the ambitions of a man who not only seized power against the popular will, but had exalted the lowest appetites" of the Army officers who helped him. He described as the "falsest of all falsities" the reasons General Batista gave for having led the revolution.

GENERAL BATISTA RULES AGAIN IN CUBA

AND THE EXILED PRESIDENT SEEKS ASYLUM IN MEXICO CITY



A PALACE CONFERENCE: Supporters of General Batista conferring in the Cabinet room before the General's arrival to take over control in Havana. He had conducted his bloodless coup from the Army base at Camp Columbia. The General's first act on taking office was to grant a subsidy to cattle growers in an effort to solve the problem of beef scarcity. (Further pictures will be found on page 456.)

THE LEADING VICTIMS OF THE BATISTA COUP: *Left*—Ex-President Carlo Prio Socarras, Cuba's overthrown leader, seen on arrival in Mexico City accompanied by his wife, who is standing just behind him. Dr. Socarras said at a Press conference that after he had installed his wife and family in Mexico City he would travel in Latin-America to pave the way for his return to power in Cuba at an early date. *Right*—Sanchez Arango, former Minister of State in the Socarras Government, with his wife and child at the Mexican Embassy in Havana, where they sought sanctuary after General Batista's coup.

Egyptian Interlude

The First of 800 Men on Trial for Arson and Looting in the Cairo Riots; The Wafd Refuses Co-operation with the New Government

On January 26 the political disturbances in Egypt that followed the abrogation of the 1936 Treaty with Great Britain reached their climax when a fanatical mob burned, looted and killed in the capital. The centre of Cairo took on the appearance of a blitzed city; many famous buildings—among them the celebrated Shepheard's Hotel—were utterly destroyed and the total damage was estimated at £E10,000,000. Moreover, many lives were lost, and at the Turf Club several Britons were tortured, mutilated and murdered. Nor was the mob's fury sated by attacks on British lives and property, and as the frenzy mounted, discrimination between nationalities was lost sight of.

A total of 800 people were arrested after the rioting and many of these have been tried before a Military Court. Last week some of them received heavy sentences of imprisonment, the prosecutor saying that there had been an attempt at conspiracy to burn down the capital. The accused, he said, stabbed the country in the back; they had acted like beasts, sowing and spreading sedition under the cover of patriotism.

SEQUEL TO THE CAIRO RIOTS—THE FIRST OF THE ACCUSED APPEAR BEFORE A MILITARY COURT: Standing behind the wire mesh at this court in Cairo are a few of the 800 Egyptians on trial for their part in the rioting that swept Cairo on January 26. Some of the accused were acquitted and others received sentences ranging from eight to twelve years' hard labour. For the prosecution it was alleged that the accused took part in a conspiracy to burn down the capital.

THE ACCUSED AND THEIR JUDGES: Ranging from well-dressed Europeanised Egyptians to simple workmen still wearing the long smocks of antiquity, these men, behind a grill at the military court in Cairo, are being tried on charges of being concerned in the January rioting. *On left*—The five judges of the military court. Two are Army officers and three are civilian judges.

On left—
A MEETING OF THE WAFD DECIDES NOT TO CO-OPERATE WITH HILALY PASHA, THE NEW PRIME MINISTER OF EGYPT: In this general view of the Wafdist meeting are, facing the camera from left to right, Ibrahim Farag Pasha, former Minister of Rural Affairs; Fouad Serag el Din Pasha, former Finance Minister and Minister of the Interior; Nahas Pasha, the former Prime Minister; Mohamed Salah el Din Pasha, the former Foreign Minister, and other members of the Wafd Executive: Their decision not to support the martial law Royalist Government of Hilaly Pasha has been interpreted in Cairo as a threat to "carry the war into the street." The outlawing of the party appears the only alternative to this or to a long internal struggle between the party and the new Government. Hilaly Pasha's broadcast last Sunday was remarkable for its criticism of the Wafd. The Prime Minister promised that he would do his utmost to obtain evacuation by the British and unity of the Nile Valley. It was not for the Wafd, he said, to complain that he had not achieved in a few days what they had failed to do over a period of twenty-five years.

THE FIRST SCOTTISH TELEVISION PROGRAMME BROADCAST FROM STUDIO 1, BROADCASTING HOUSE, EDINBURGH: Members of the Edinburgh Scottish Country Dancing Society performing during the inaugural programme which was held in the presence of Mr. James Stuart, the Secretary of State for Scotland. Mr. Stuart is seen seated in the background, next to Edinburgh's Lord Provost, Mr. James Miller. Apart from an initial hitch regarding the time when broadcasting was to begin the new television service started well, and it was estimated that about 30,000 viewers tuned in. It has been clearly pointed out that this was the inauguration of television in Scotland, not of Scottish television. For an indefinite time most of the programmes viewed in Scotland will come from the South, though Scotland, in one way or another, will contribute to the national service. The Scottish broadcasts are made through Kirk O'Shotts, which is linked with the South by micro-wave radio. With the opening of Kirk O'Shotts television is now available to 70 per cent. of the British population.

THE FIRST SCOTTISH TELEVISION PROGRAMME

THE TELEVISION SERVICE IS OFFICIALLY INAUGURATED BY MR. JAMES STUART

AFTER THE INAUGURAL PROGRAMME FROM EDINBURGH: Melville Dinwiddie, Controller of the B.B.C. in Scotland, announcers Mary Malcolm and Alastair Macintyre, Mr. James Stuart, the Secretary of State for Scotland, and Marshal of the R.A.F. Lord Tedder seen together in the studio.

SCOTLAND'S OWN WOMAN ANNOUNCER: *Left*—Mary Malcolm, in tartan sash and brocade gown, whose picture was the first to flash across the television screens of viewers north of the Border. *Right*—Mr. James Stuart making his inaugural speech. Beside him are Lord Provost James Miller, Lord Tedder, and the Very Rev. Dr. Charles L. Warr, Dean of the Thistle. Mr. Stuart paid tribute in his speech to the late Dr. Logie Baird, the Scotsman who had done so much to pioneer television.

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THE STORY OF A SUPERMAN—"CORIOLANUS" STARTS THE SEASON AT STRATFORD-ON-AVON: Anthony Quayle (right, centre) receives advice from Menenius (Michael Hordern) in one of the scenes from the great Roman tragedy which was presented at Stratford-on-Avon last week at the start of the 1952 season. The play, produced by Glen Byam Shaw, has been well received.

"CORIOLANUS" STARTS THE STRATFORD SEASON

Anthony Quayle as the Patrician Traitor

Coriolanus has never been popular with the critics. They have always said that this tale of patrician pride and arrogance is the most mannered of all Shakespeare's tragedies, essentially a literary work of skilled craftsmanship, not the outpouring of genius in the manner of *Macbeth* and *Hamlet*. Whatever the rights and wrongs of this viewpoint, there is no doubt that Anthony Quayle and Mary Ellis have brought fire and emotional power to the parts of Coriolanus and Volumnia in the first production of the 1952 season at Stratford, and if Mr. Quayle has tended to show the Roman traitor more as a hard-bitten soldier than as a great patrician, the interpretation is none the less dramatically effective. Shakespeare probably wrote *Coriolanus* in 1608 after reading the life of Coriolanus in Thomas North's translation of *Plutarch's Lives*. Coriolanus is a typical Shakespearean figure of tragedy shown in course of destruction through the excess of a particular trait in his character. Coriolanus fell because of his excessive contempt for the multitude, just as Timon was betrayed by his excessive generosity.

VOLUMNIA APPEALS TO CORIOLANUS: Mary Ellis and Anthony Quayle in one of their dramatic scenes together. Mary Ellis's emotional power in the big scenes has been much praised by the critics.

"LET THEM PULL ALL ABOUT MINE EARS": Anthony Quayle as Coriolanus in the new Stratford production. Last year in the historical cycle of plays, Mr. Quayle appeared as the reprobate Sir John Falstaff. Now as Coriolanus he achieves distinction in an heroic role. He presents Coriolanus as a tough soldier with a parade-ground rasp in his voice, wearing his wounds aggressively as badge of rank. There is less of the patrician about him than in most interpretations of the part. The method, however, is effective, particularly in the later scenes.

"I WOULD MY SON WERE IN ARABIA": Volumnia (Mary Ellis) and an attendant to Virgilia, played by Zena Walker. The scenery and costumes in this new Stratford production are the work of Motley, and are very well suited to this great tragic play.

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A FOREIGN NEWS COMMENTARY

A Pictorial Survey of Events Abroad, With Notes

BY FERDINAND TUOHY

THE CUBAN COUP D'ÉTAT : Soldiers, sailors and police outside the Central Police Headquarters, Havana, on the morning of the coup in which General Fulgencio Batista overthrew the Government of President Carlos Prio Socarras. It was in 1933, as an Army sergeant, that Batista made his first successful bid to attain power in Cuba.

Batista Over Cuba.—General Batista's seizure of power in Cuba was everything a coup d'état should be: quick, simple, complete and unbloody. "I did it all with between fifteen and twenty captains and lieutenants," explained the island's former dictator (1933-44).

The author of the rising was at his fifth "revolution" and had the full local know-how. He could also put forward some justification. President Socarras' Government *had* become involved in political gangsterism, as thirty killings in Havana inside two years had shown, and his rule *was* breeding a certain amount of chaos, though whether Prio meant to stage a phoney revolution next month in anticipation of his defeat in June's presidential election was more open to doubt.

Batista struck at 2.45 a.m. by driving to Army H.Q. outside Havana. It was natural that he should head thither—had he not been a famous sergeant, the office, chairborne sergeant who refused to be promoted even after he had ousted the formidable President Machado? It was all that his supporters could do to get him eventually to take the rank of Colonel. That was in 1933.

Now a fifty-two-year-old General addressed the troops to such effect that seventy-seven minutes later he controlled every military post in the island.

Through sleeping Havana swept a few tanks and armoured cars. At the Palace, it was a suitably hued surrender, the occupants draping their bedroom sheets out of the windows and on the roof. A moment's M.G. fire from within, and two Batista police fell dead. Then it was all over. For the rest of the morning about 200 Cubans stood around, watching events as if a movie were being shot.

But the bird had flown to the countryside, and one or two of Prio's high-ups, over to Miami.

Batista was President, 1940-44. Now he apparently means to rule Cuba at the head of a junta-like Cabinet.

GENERAL BATISTA AT CAMP COLUMBIA : The new head of State acknowledging the greetings of his supporters after the success of his coup d'état, which was achieved in 77 minutes with the support of between fifteen and twenty Army officers and their men

PRESIDENT CARLOS PRIO SOCARRAS TAKES HIS LEAVE : The Cuban President (right) with his aides before he fled from the Presidential Palace in Havana. The President attempted to defy Batista, but when tanks and troops arrived outside the Palace he gave in

PUERTO RICANS GO TO THE POLLS : Electors in the San Juan Central High School when they cast votes for or against the new Home Rule Constitution. The final returns were 373,000 votes for the Constitution and 82,000 against.

Puerto Rican Constitution.—Attention has recently been called to the steady seeping of Communism into patches of Central and South America. The United States is particularly susceptible to any Stalinist symptoms on a wide circumference from the Panama Canal. The Caribbean island of Puerto Rico comes within such range and obviously something had to be done about it after events of November 1950.

As long ago as the mid-'30's, Puerto Rico was chosen as the keystone of American defences in the Caribbean; there had been extended all-arms exercises; the very place for Moscow to "start things."

While two Puerto Rican Reds blazed at the police outside Blair House, Washington, in an attempt to get at President Truman, the island itself became the scene of a rising instigated by the "extreme Nationalist" (which can mean anything) and ex-gaolbird Campos.

The island's Governor Marin later claimed that he had beaten a Communist conspiracy, after nine towns had been freed.

Obviously something had to be done about Puerto Rico, which had been jogging along under U.S. occupancy since the year 1898, and "organised but unincorporated" since 1917.

Now it has been turned into a Commonwealth by a national referendum.

Essentially this means the end of U.S. Congressional power to repeal the island's laws.

THE ARCHITECT OF PUERTO RICAN HOME RULE : Dr. Antonio Fernod Isern leaving a polling booth after casting his vote in the Puerto Rican referendum. He served as President of the Constitutional Assembly which drafted the new charter.

A BLOW TO THE HOPES OF BOB TAFT : The Republican Senator holds his hand to his head after making his last speech in a barnstorming tour of New Hampshire before the recent primary, in which he was defeated by General of the Army Eisenhower. Taft's hopes of gaining the Republican nomination for the American Presidency were dimmed, but not obliterated, by the New Hampshire polling.

The New Hampshire Primary.—All the United States and much of the outside world watched the primary election in New Hampshire, whose electors were the first to indicate choice of candidates to contest the Presidency next November. Primaries are held in only sixteen of the forty-eight States, but they provide the principal pointers to the next occupancy of the White House.

The way 129,000 New Hampshire voters balloted pointed to General Eisenhower, " the invisible man," 3,000 miles away, in Paris. But this was his recognised strongest State, and it is well to wait at least until the next primary in populous New Jersey on April 15 before deciding that his Republican opponent, Senator Taft, and President Truman, who still has the Democratic nomination for the asking, despite his New Hampshire defeat by Democratic Senator Kefauver, are not for the White House.

Western Europe has every reason to be glad of the result, which is a clear victory for " Europe First and Fully " against the limited help and greater concentration on the East and home defence advocated by Taft. Kefauver says he agrees with President Truman's foreign policy, which also bears a close resemblance to " Ike's." Obviously further anti-Americanism in Western Europe will help Taft.

A NEW POST FOR LORD ISMAY : The former Commonwealth Relations Secretary, who leaves the Conservative Government to become the first Secretary-General of the North Atlantic Treaty Organisation.

Ismay Goes to N.A.T.O.—When public servants designated by their record and abilities are offered posts of great import during a cold war, should they accept them in spite of private tuggings in another direction ? In all-out war, their answer is a foregone conclusion—duty first.

Owing to bad management, there was much difficulty in filling the vastly creative post of Secretary-General to the North Atlantic Treaty Organisation in its new (Paris) style.

Isolationists in the United Kingdom will deplore that it has gone to a famous Churchill man, Lord Ismay. Western Europe is well pleased, because British occupancy of this key post in the defence of Europe will identify Britain more closely with the Continent.

THE LATEST DARING ESCAPE FROM BEHIND THE IRON CURTAIN : Ludevit Ollarek (left, centre) and his family, and their friend Wendel Klestinec, seen on arrival in Vienna after they had crossed the Morava River in an amphibious car, and thus eluded the frontier guards of the Red Army.

Ollarek's Day of Escape.—February 27 is a day of national mourning for the great majority of Czechs and Slovaks, according to thirty-five-year-old Ludevit Ollarek. It was on that date in 1948 that the present Government seized power on behalf of Moscow. So Ollarek chose it as the day of escape to freedom.

He also chose a new method so as to keep clear of frontier guards while crossing the Morava River, from Czechoslovakia into the U.S. Zone of Austria. Last December Ollarek acquired an old German Army volkswagen in his home town, Bratislava, where he was a prominent company owner until the Communists dispossessed him.

He reconstructed the " People's Car " on amphibious principles, but she sank when secretly tested in a pond. When further work aroused suspicion, Ollarek said he was making his strange model for duck-shooting.

On the Czech day of mourning, Ollarek, with his wife, three small children, and a man friend, left Bratislava for duck-shooting along the Morava.

They stuck fast in snow as they approached the river and had to dig out frantically after being recognised by a Communist agent. Then, in midstream, the engine stopped. But, by dint of paddling and towing, all five got to the Austrian shore.

More mechanical trouble ; urgently the duck-shooting model had to be abandoned. After walking for ten nights in succession, and hiding away by day for sleep, the tough family party reached Vienna.

BERNHARD RAMCKE DRIVES A NAIL INTO A BOARD DEPICTING THE OLD EMBLEM OF THE NAZI PARATROOPERS: The proceeds from the sale of nails for the board go to aid the needy families of paratroopers who were missing in the Second World War. Ramcke was a Nazi paratroop general.

Remer and Ramcke.—The part soldiers are playing in the political side of the cold war is universal and growing. Not to be outdone, the Germans have two generals to offer : Remer and Ramcke.

Remer, whose claim to fame is that he saved Hitler on July 20, 1944, has been on trial at Düsseldorf for criminal slander. More will be heard of him, as neo-Nazism comes increasingly into the open in a West Germany largely handed back to the Germans. But Bernhard Ramcke, fifty-six-year-old former parachute general, should prove the better stayer.

Ramcke is leading the demand for the release of Nazi war criminals—of all save clear-cut murderers, and especially of three penalised by the Nürnberg retrospective laws which punished men for crimes that were not so listed when they were committed. He says there are some 1,100 imprisoned in nine European countries (including sixteen in Switzerland), and he includes in his demand the men " buried alive in Spandau prison," notably Rudolf Hess.

Ramcke is a curious case. After holding Brest for seven weeks against unnecessary onslaught by two of Patton's corps, he was held by the French for several years on war charges, until he took French leave whilst on parole.

From Germany, he offered to rebuild Brest with the labour of 200,000 Germans. For other, personal and soldierly reasons, Ramcke had impressed the French, who let him go free when he returned to give himself up.

He is building up his movement—whatever it turns out to be—on the strength of a hard core of former parachutists.

PETRA

THE "ROSE-RED CITY" IS NOW THE RESORT OF BRITISH SOLDIERS ON LEAVE

PREPARING FOR THE LAST STAGE OF THE JOURNEY TO PETRA: Arabs saddling up at the fort of Wadi Mousa before leaving for the famous city of Transjordan which can only be visited on horseback or on foot. From time to time British soldiers of Middle Eastern Command go to Petra when on leave, and some of the pictures on these pages were taken during such a visit. Petra lies under Mount Hor, about fifty-six miles south of the Dead Sea. No car has ever penetrated the city.

"A rose-red city half as old as time." Those were the immortal words of Dean John William Burgon in his Newdigate Prize Poem upon Petra, and in the century since they were written they have been quoted again and again in description of the ruined capital of the Nabateans which, rather strangely, has now come into the news for two reasons, both widely different.

The first reason is because adventurously-minded British troops from Middle Eastern Command are taking the opportunity of visiting Petra while on leave, and the second is by reason of the publication in book form for the first time of the story of a journey to Petra included in *Edward Lear's Journals*, which have been admirably edited by Mr. Herbert van Thal (published by Arthur Barker at 21s.).

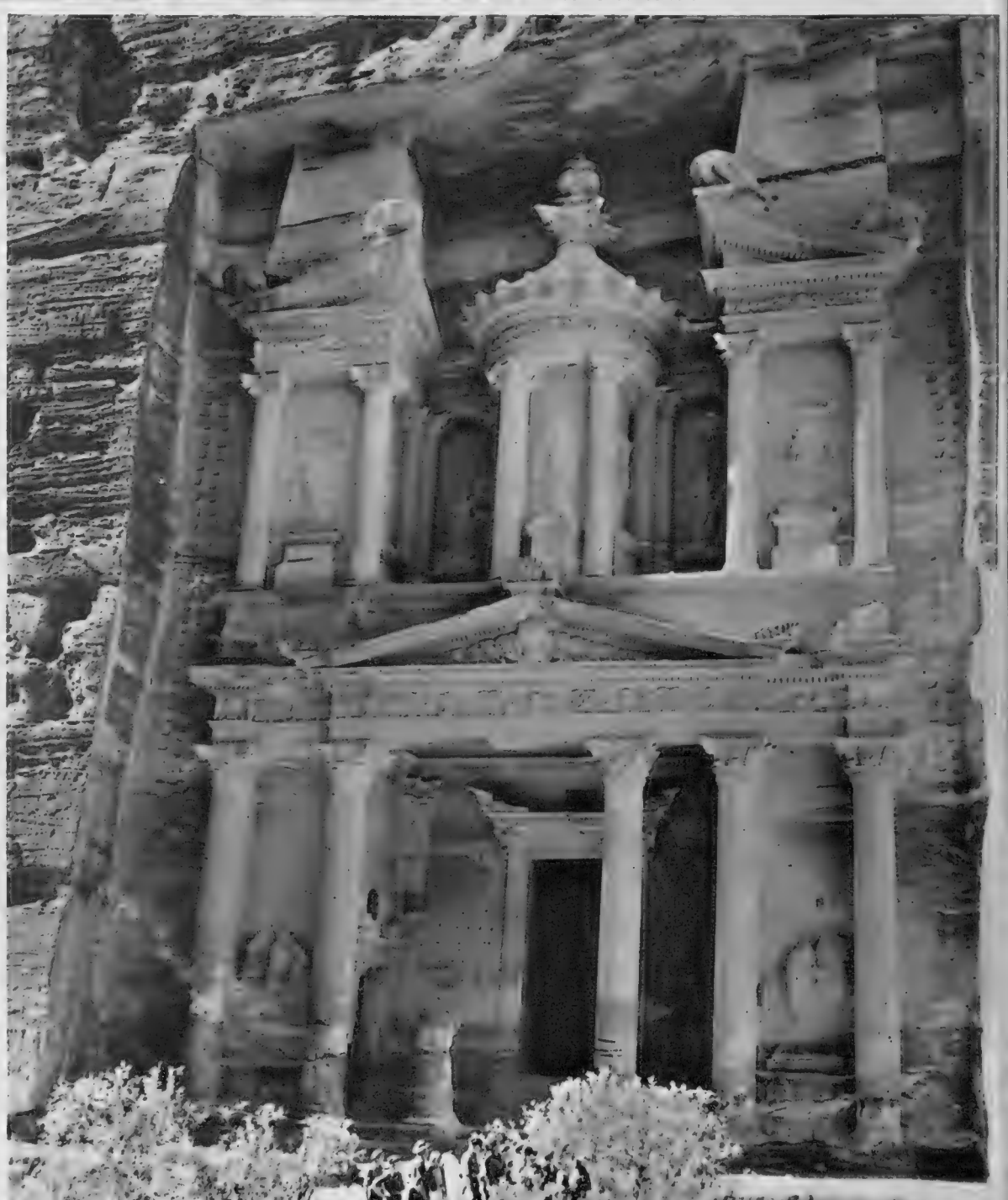
Lear's nonsense verse has tended to eclipse all his other writings, but now Mr. Van Thal shows us that this master of rhyme, who also had a flair for landscape painting, was no less a master of prose, and there was no doubt that he was strangely moved by his visit to the capital of the Nabateans, the nomadic people who apparently took refuge at Petra at the time of the Assyrian and Babylonian invasions. The Nabateans used the valley as a burial-place and a treasure store, which was raided in 312 B.C. by the Macedonians and later by the Romans of Pompey's armies. It was these nomads who held the desert line from Damascus to the Red Sea, controlling most of the commerce between the Indian Ocean and the Mediterranean. Winning the favour of Augustus by a victory over Cleopatra's Red Sea fleet, they then consolidated their monopoly of trade with the Orient.

In A.D. 105 Trajan captured Petra. What he wanted was its wealth and trade. All he obtained was the shell of it, for the Nabateans shifted their commerce to Palmyra. In later years treasure hunters began to break into the tombs of Petra, and Saracens of the seventh century wrecked the town in search of buried spoil. In addition to the empty funeral caves little now remains, even in ruin, except the temple in the gorge, a great amphitheatre, and the wreck of a colossal classic temple on the mountain-top of El Deir.

And now let us turn again to Edward Lear, whose fascinating journals should surely bring him a wider fame now that they have been so enterprisingly published. Lear commences his journal of the Petra journey in the month of April 1858, telling of his meeting with the Sheikh of the Jehaleen, he who had guided Robinson to Petra in 1838 and also the later explorer de Saulcy. The Sheikh was a figure of infinite avarice and cunning, and he drove a hard bargain with Lear, demanding £30, camels included, for the Petra round trip, with an escort of fifteen.

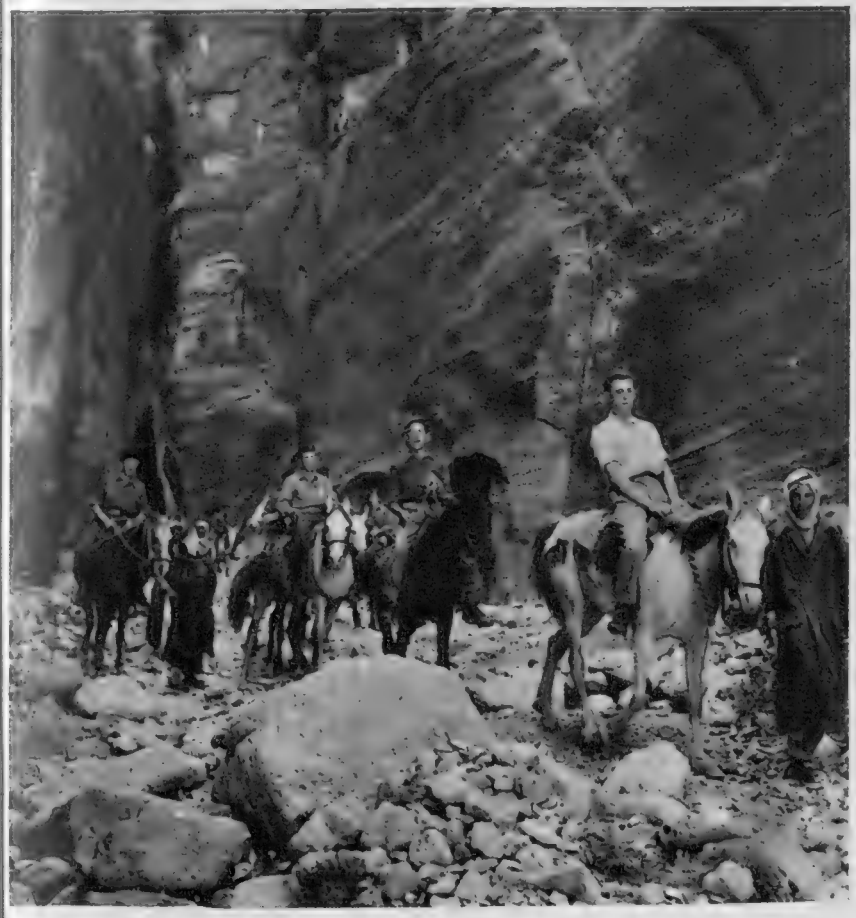
It was on April 13 that Lear came to the rose-red city. "The slow advance," he recorded, "chills with a feeling of strange solitude the intruder into the loneliness of this bygone world, where on every side are tokens of older greatness, and where between *then* and *now* is no link. As the path wandered among huge crags, and over broad slabs of rock, ever becoming more striped and glowing in colour, I was more and more excited with curiosity and expectation. And after passing the solitary column which stands sentinel-like over the heaps of ruin around, and reaching the open space whence the whole area of the old city and the vast eastern cliff are fully seen, I own to having been more delighted and astonished than I had ever been by any spectacle. Not that at the first glance the extent and magnificence of this enchanted valley can be appreciated: this its surprising brilliancy and variety of colour, and its incredible amount of detail, forbid.

"But after a while, when the eyes have taken in the undulating slopes terraced and cut and covered with immense foundations and innumerable stones, ruined temples, broken pillars and capitals, and the lengthened masses of masonry on each side of the river that runs from east to west through the whole wady, down to the very edge of the water—and when the sight has rested on the towering western cliffs below Mount Hor, crowded with perforated tombs, and on the astonishing array of wonders carved in the opposite face of the great eastern cliff—then the impression that both pen and pencil in travellers' hands have fallen infinitely short of a true portrait of Petra deepens into certainty. Petra must remain a wonder which can only be understood by visiting the place itself, and memory is the only mirror in which its whole resemblance can faithfully live. I felt, 'I have found a new world—but my art is helpless to recall it to others, or to represent it to those who have never seen it.'"

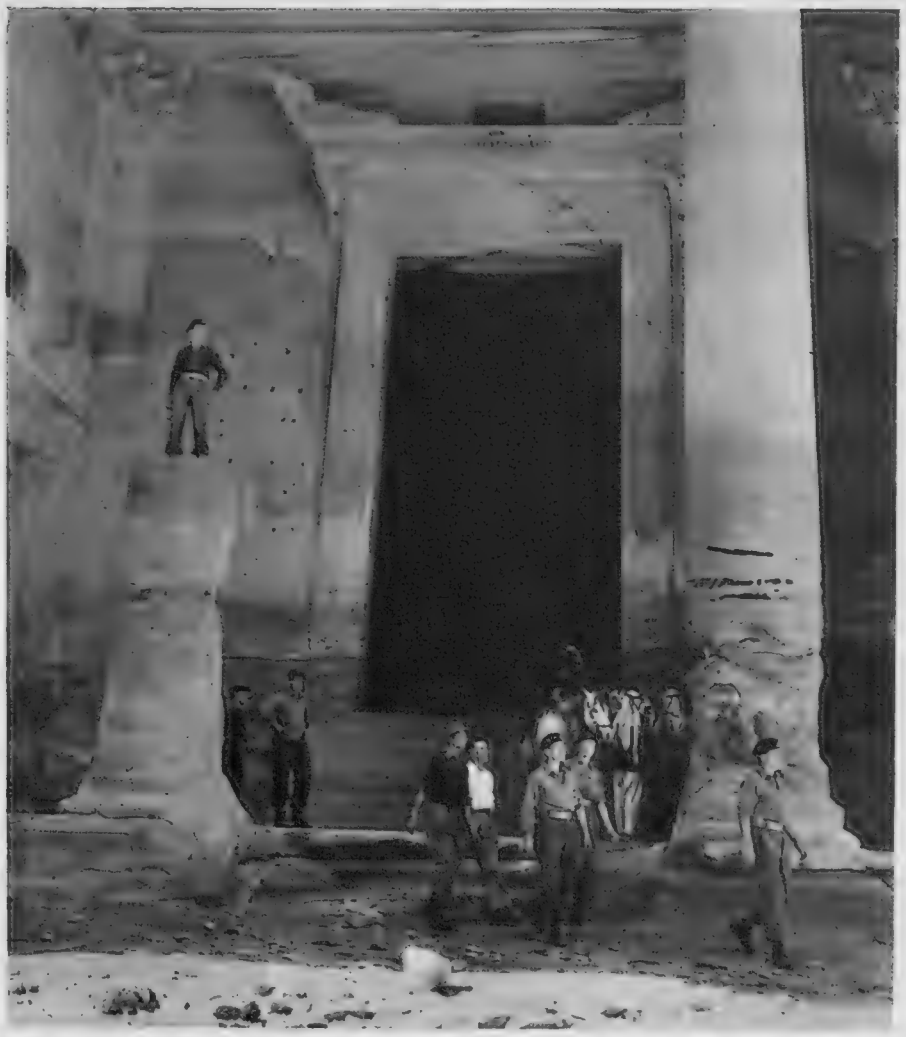


THE ROCK-HEWN BUILDING KNOWN AS THE TREASURY, ONE OF THE WONDERS OF PETRA, THE GREAT CITY WHICH IS REPRESENTED BY THOUSANDS OF ROCK TOMBS RANGED IN TIERS ON THE IRIDESCENT SANDSTONE FLANKS OF ENCIRCLING MOUNTAINS: In the foreground is seen a party of British soldiers, men on leave from Middle Eastern Command, who joined forces for an expedition to this extraordinary old capital which so few people have seen.

THE TEMPLE OF EL DEIR, HEWN FROM THE LIVING ROCK: This is the largest of all the monuments at Petra, and was very probably a temple, not a tomb as some archæologists have asserted. Its size is revealed by the six soldiers standing in front of the main portal. Petra's importance in ancient days, when it was the stronghold of the Nabateans, lay in the fact that it was situated near the point of intersection of many of the great caravan routes.



THE APPROACH TO PETRA THROUGH A GREAT GORGE IS A MOST AWE-INSPIRING EXPERIENCE: British soldiers arriving on horseback in the famous city. In some places this ravine is only 12 ft. wide. The rock walls tower to 100 ft.



OUTSIDE THE DOORS OF THE TREASURY AT PETRA: British troops inspecting the wonders of the ancient city of the Nabateans, who in their heyday used Petra as a burial-place and a treasure store. In the years when they held the desert line from Damascus to the Red Sea, the Nabateans controlled the commerce of the Middle East.

AN AERIAL VIEW OF THE COMPLETED HUNYANI POORT EARTH DAM IN SOUTHERN RHODESIA: Below the dam runs the new railway line, replacing the original line now submerged by the huge new lake. Twenty-two miles away lies Salisbury, capital of Southern Rhodesia, which has been granted half the yield of the lake by virtue of the city's contribution towards the cost of construction. The completion of the dam was a race against time, for abnormally heavy rains prematurely raised the lake to its 120-ft. level at the wall.

AFRICA'S BIGGEST EARTH DAM

The Great Hunyani Poort Dam in Southern Rhodesia is Now Complete and Full

THE LARGEST EARTH DAM IN AFRICA: It was built to contain a lake over 8 miles long and 4 miles wide, holding 55,000,000,000 gallons and supplying vitally-needed water to a rapidly developing country.

CONSTRUCTION WORK IN PROGRESS ON THE DAM'S SPILLWAY: The spillway was cut through solid rock beside the dam and lined with reinforced concrete. The spillway bridge, constructed of pre-stressed concrete, is probably the first of its kind in Southern Africa.

The new Hunyani Poort earth dam in Southern Rhodesia, which is already full, will not only satisfy the requirements of Salisbury until the city grows to three times its present size, but bring independence from the fickle rainy seasons to a vast area of the country. Half the dam's yield of 45,000,000 gallons a day goes to Salisbury, which contributed a substantial part of the constructional costs, and the Government will use the other half for township and industrial development at Norton, now a small town a few miles from Hunyani Poort.

Phenomenal rains in Southern Rhodesia early this year—up to 66 ins. were recorded in some parts—at one time threatened the dam. The water rose at an alarming rate before the spillway had been completed, but after day and night emergency work, engineers won the race against time and the work was completed just before the water reached its highest level.

Plans are already being made for the development of the lake and its environments as a recreational centre. A strip of land above flood-level will be reserved for sailing and angling clubs, and another site has been chosen for camping, rest houses, restaurants and, in time, swimming baths. Swimming in the lake will be strictly forbidden because of the danger from the dreaded tropical disease bilharzia and also from crocodiles. An African has already been taken by one of the crocodiles which have been enterprising enough to take immediate advantage of a new and entirely comfortable site.

Hunyani Poort cannot be declared a National Park until a description has been made of the declared boundaries, and it is hoped that this information will soon be available. Meanwhile, a special committee of the National Parks Board has already been dealing with the various problems.

TIGNES, THE DOOMED SAVOY VILLAGE

THE INHABITANTS REACT SHARPLY TO THE LOSS OF THEIR HOMES

At the time of writing, the village of Tignes, in the Savoy Alps, has just celebrated its last wedding, the last in the history of this Alpine community, and they have also just gone to the poll to elect a mayor and councillors who, however, will never assume office.

No sooner had the election taken place, indeed, than the 550 Tignards began evacuating their homes at Government orders to make way for the 700-acre artificial lake created behind the new dam lower down the Tignes Valley. The evacuation was not accomplished without protest, and indeed some of the Tignards declared that they would rather drown than leave their homes. They were not particularly impressed by the fact that the new hydro-electric station at Tignes would provide millions of kilowatts annually to a power-hungry France.

As a result of an angry protest meeting of the people against the evacuation, the local Prefect called in the military authorities and a detachment of troops had to go to Tignes during the days before the valley flooding took place. For the people of Tignes there is real tragedy in the loss of their community life, and in their view mere financial compensation cannot solve the problem.

THE VILLAGE OF TIGNES, NESTLING IN THE TIGNES VALLEY, IN THE SAVOY ALPS, BEFORE IT WAS SUBMERGED BY THE LAKE FORMED BEHIND THE NEW DAM: Some of the villagers refused to leave their homes, and troops had to be sent to the village to enforce the Government orders. Arrangements have been made to compensate the villagers.

THE LAST WEDDING TO BE HELD IN THE DOOMED VILLAGE OF TIGNES: The President of the Village Bachelors' Club reading the traditional address to the newly-weds. This was seven days before the floodgates were due to be opened and Tignes was submerged beneath the waters of a new lake.

FOR THEM THE PAST WOULD BE BURIED BENEATH THE WATERS: Inhabitants of Tignes gathered in front of the little church after they had held a mass protest meeting at the Inn.

THE DAM WHICH HAS BEEN BUILT ACROSS THE VALLEY OF TIGNES AND WHICH MEANS THE DISPLACEMENT OF 550 VILLAGERS: It is situated higher than any other dam in Europe, and is part of a great hydro-electric scheme which will bring France a vast access of power for industry.

THE MELTING SHOP AT MARGAM ABBEY WORKS—A LADLE OF MOLTEN METAL FROM THE MIXER IS POURED INTO AN OPEN-HEARTH FURNACE AT THE NEW PLANT IN SOUTH WALES: At the melting shop the molten metal from the reconstructed blast furnaces is delivered to one of two 800-ton mixers, so elevated as to pour direct into the 75-ton ladles standing on transfer cars at stage level. The ladles are brought opposite the furnaces requiring to be charged. The 200-ton oil-fired furnaces, when tapped, deliver the molten metal into ladles and the next process is to pour the hot metal into ingot moulds. The Margam Abbey works is the great post-war enterprise of the Steel Company of Wales. There has been no single project of this size brought into being in Britain since the early railway age.

STEEL, THE VITAL METAL

An Account of a Mighty Industry and of its Development Across the Years, Most Notably in Britain

By IVOR THOMAS (former M.P. for Keighley)

WITH SPECIAL "SPHERE" DRAWINGS BY GORDON NICOLL, R.I.

WHEN Cortes landed in Mexico, the local people could not understand his interest in gold, which they regarded as commonplace; they had much keener eyes for his men's weapons of steel, which they thought to be a gift from the gods. Perhaps they were right, for steel is more essential to civilisation as we understand it than gold. From the pins and needles of the housewife to the ships and bridges of the great waterways it finds a myriad peaceful uses; and under modern conditions the ability of a country to defend itself is governed by its steel-making capacity. It is symbolic that when Joseph Vissarionovich Djugashvili wished to indicate to the Russian people his revolutionary strength he chose the name Stalin, "man of steel."

In his day Bismarck was called "the Iron Chancellor," and the fact that "man of steel" is to-day regarded as a more impressive title shows the extent to which steel has taken the place of iron. Steel is commonly defined as being an iron-carbon alloy containing not more than 1·7 per cent. of carbon. Though the carbon content is small, it makes a world of difference to the physical properties of the metal. When iron is made, it contains impurities such as carbon, sulphur, phosphorus, manganese and silicon. The process of converting iron into steel consists in removing these impurities by oxidisation and controlling the amount of carbon. For the alloy steels needed for special purposes small quantities of other elements such as nickel, chromium and molybdenum may be added. The value of steel to man is that by variations in the process of manufacture it can be made to possess almost any property at will—soft or hard, malleable or brittle, and so on.

A 10-TON ELECTRIC ARC FURNACE: The arc process is one of several electric methods of steel-making. In this process a typical furnace may be of some 30-tons capacity. The arc is struck between three electrodes. These electrodes, which are of carbon, are automatically controlled to maintain the correct gap as the charge melts and changes shape on becoming liquid.

Iron is found in the metallic state only when it comes to the earth in the form of meteorites. For industrial purposes iron has to be recovered from ores in which it exists in combination with oxygen. About a twentieth of the earth's crust is iron, which suggests that there need never be a shortage; but unfortunately it is widely scattered. It is not practicable to work ores containing less than 20 per cent. of iron, and deposits of ore containing more than this percentage account for only about one-hundredth of the total iron in the earth's crust. The hæmatite ores of Cumberland contain about 60 per cent. of iron, but most of the richer British ores have now been exhausted, and we have had to fall back on the low-grade ironstone beds stretching from Lincolnshire through Northamptonshire to Oxfordshire. The United States has large supplies of rich ore and so has the Soviet Union. Australia and India have iron ores with a metallic content of 60 per cent. Spain and Sweden are traditional suppliers of high-grade ore, and the French and German industries are based on the low-grade ores of Lorraine. North Africa has long been an exporter of rich ores, and an important new field in French West Africa, with a metal content of over 50 per cent., is just being developed. Most ores are won by open-cast working, but some are mined.

The Iron Age probably began about 3,000 years ago when some primitive savage noticed that from the reddish earth heaped around his wood fire there dripped a liquid that cooled on a stone into a metal capable of being worked into pleasing shapes. In effect, this was how iron continued to be made for many centuries, and under Queen Elizabeth I a law

was passed prohibiting the cutting of timber in certain parts of the country for iron-making and forbidding the building of any more ironworks in—believe it or not!—Surrey, Kent and Sussex. But necessity is the mother of invention, and about 1730 Abraham Darby opened a new era when he discovered how to make from coal a coke suitable for smelting ore in place of wood-charcoal.

In modern practice iron is recovered from the ore by charging it into a blast furnace along with limestone and coke in fixed quantities at regular intervals. An intense heat is maintained by a blast of hot air supplied through holes near the base; the blast acts as a bellows does to a fire. The burning of the coke sets up chemical reactions between the ingredients and causes molten iron to drop to the bottom of the furnace and slag to float on top of it. Blast furnace gas is drawn away at the top for use in various parts of the works. The slag is drawn off every few hours, and five times a day a clay stopping in the base of the furnace is pierced to release the molten iron. Out it swirls in a majestic stream and is guided along sand-banked channels. About 100 tons rushes out at each tapping, and then the hole is sealed again with clay rammed home by a "gun." The temperature of the lowest zone in the furnace is about 1450°C., and in that zone, as viewed through a small aperture with a transparent filling, a scene of the wildest confusion presents itself. But no one really knows what goes on in the interior of a blast furnace. Sometimes furnaces behave capriciously, but a modern blast furnace should yield 1,000,000 tons of iron, working day in, day out, before its firebrick lining needs renewal. Every man will form his own image, but for me a blast furnace resembles a giant cocktail shaker. Ore, limestone and coke are the ingredients, and every five hours or so the precious liquid is drawn off. Let us see what happens to it.

If the blast furnace serves an iron foundry, it may be guided into metal moulds, carried by an endless chain, in which it sets into "pigs" of pig-iron. These get their name because the molten iron used to be run into sand moulds, and the resulting forms struck the furnacemen as looking like a sow's litter. The pig-iron, along with scrap iron and coke, is served into a greatly simplified version of a blast furnace called a cupola and is remelted. The molten iron is allowed to flow into a ladle, and from the ladle it is "cast" (that is, poured) into moulds, usually made of sand, where it sets solid in the shape desired by the user.

This is cast-iron, used for innumerable objects from lamp-posts to sewage pipes. But only about 4 cwt. in every ton of pig-iron turned out by the blast furnaces goes to make iron castings. The greater part of the pig-iron is guided into ladles, which are emptied into great "mixers," holding as much as 1,000 tons apiece, preparatory to being made into steel.

There are three methods of turning iron into steel. The first is the Bessemer process, made known by Sir Henry Bessemer in 1856. The Bessemer converter is a metal cylinder lined with a fireproof material and mounted on trunnions so that it can be tilted. A quantity of burnt lime is put into it, "hot metal" from the mixer is poured in, and an air blast is sent through the contents. The object of the "blow" is to remove the impurities by oxidisation. No outside heat has to be applied, for the chemical changes provide all the intense heat needed. After a few minutes a brilliant spectacle, exceeding by far any other fireworks display, is seen at the top of the converter. At the end of the "blow" the converter is tilted, slag is drained off, and the molten metal is poured into a ladle. After a little further treatment in the ladle we can say that steel has been made.

The Bessemer process has the advantage of needing no external heat, but it wastes a good deal of heat into the atmosphere. In 1862 Sir William Siemens devised the open-hearth process, which needs external heat but allows the spent gases to be used again. The open-hearth furnace is essentially a shallow bath lined with special bricks. It has a back wall where the charging is done and a front wall with doors from which the resulting steel is poured into a ladle. A quantity of lime is added to the charge, and this produces slag which has to be drained off. Heat is supplied by a jet of gas or oil vapour which plays over the top of the charge, now in one direction, now in the other. A big advantage of the open-hearth process is that steel scrap can be added to the charge in almost any desired proportion; 50 per cent. scrap and 50 per cent. pig-iron is common. About 60 tons of steel are usually made at a time.

THE PITTSBURGH GLOW: A distant view of part of America's great steel-making city, for long the main centre of steel production in the United States, but now rivalled by other centres both on the Great Lakes and on the Delaware. The original commercial and industrial prosperity of Pittsburgh arose because of its situation upon a coalfield. Turning out steel rails for the fast-developing network of railways in America brought Pittsburgh prosperity in the second half of the nineteenth century.

In the third process, more recently developed, the furnace is heated electrically, either by an electric arc or by a current induced in the steel charge. This method is used when exact conditions are required for making special kinds of steel, and for the same reason the charge employed is normally not pig-iron but steel scrap with an accurately known composition.

Each of these three processes can be sub-divided into acid and basic processes, depending on the lining of the furnace, which determines the chemical reactions that go on; and the lining employed depends in turn on the amount of impurities in the ore that is to be charged. In this country about 7½ per cent. of the steel output is made by the Bessemer process, 89 per cent. in open hearths, and 3½ per cent. in electric furnaces. In each the basic process prevails over the acid. Nearly four-fifths of all the steel made in Great Britain is made by the basic open-hearth process.

Some of the steel made in these processes may be cast direct from the ladle into moulds, in which the molten metal solidifies into the form desired by the user. Over 100,000 differently-shaped patterns for steel castings are used in this country. The objects made by castings are usually complicated, such as the rear-axle casings of motor-cars, or large, such as stern frames for ships. But the great bulk of the molten steel made is "teemed" or poured from the ladle into iron-moulds where it solidifies into white-hot ingots. This is the starting-point of the processing of steel, so much so that the ingot has become a symbol for the industry.

The white-hot ingots are stripped—that is, the moulds are withdrawn from them—and they are gently lowered

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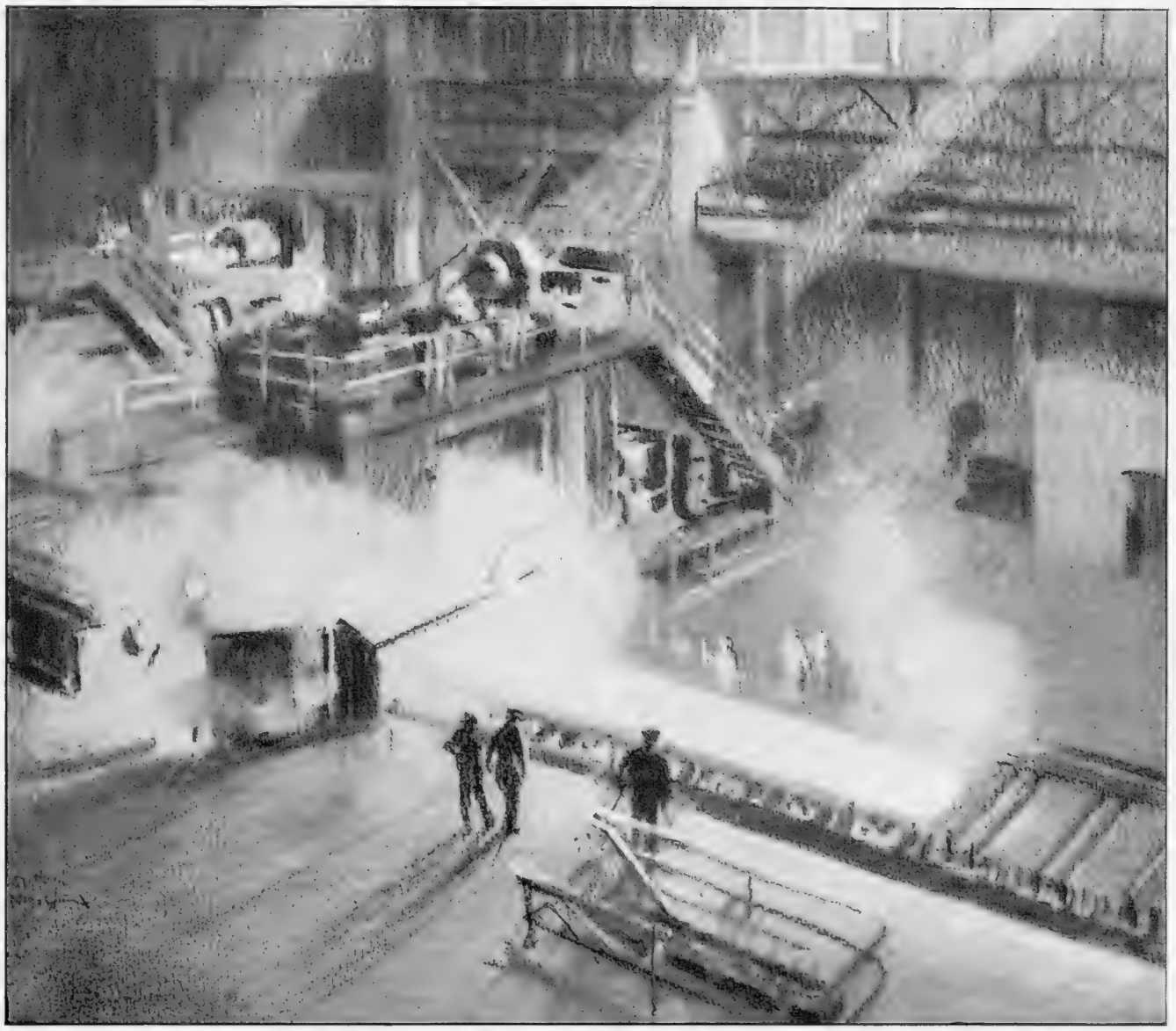
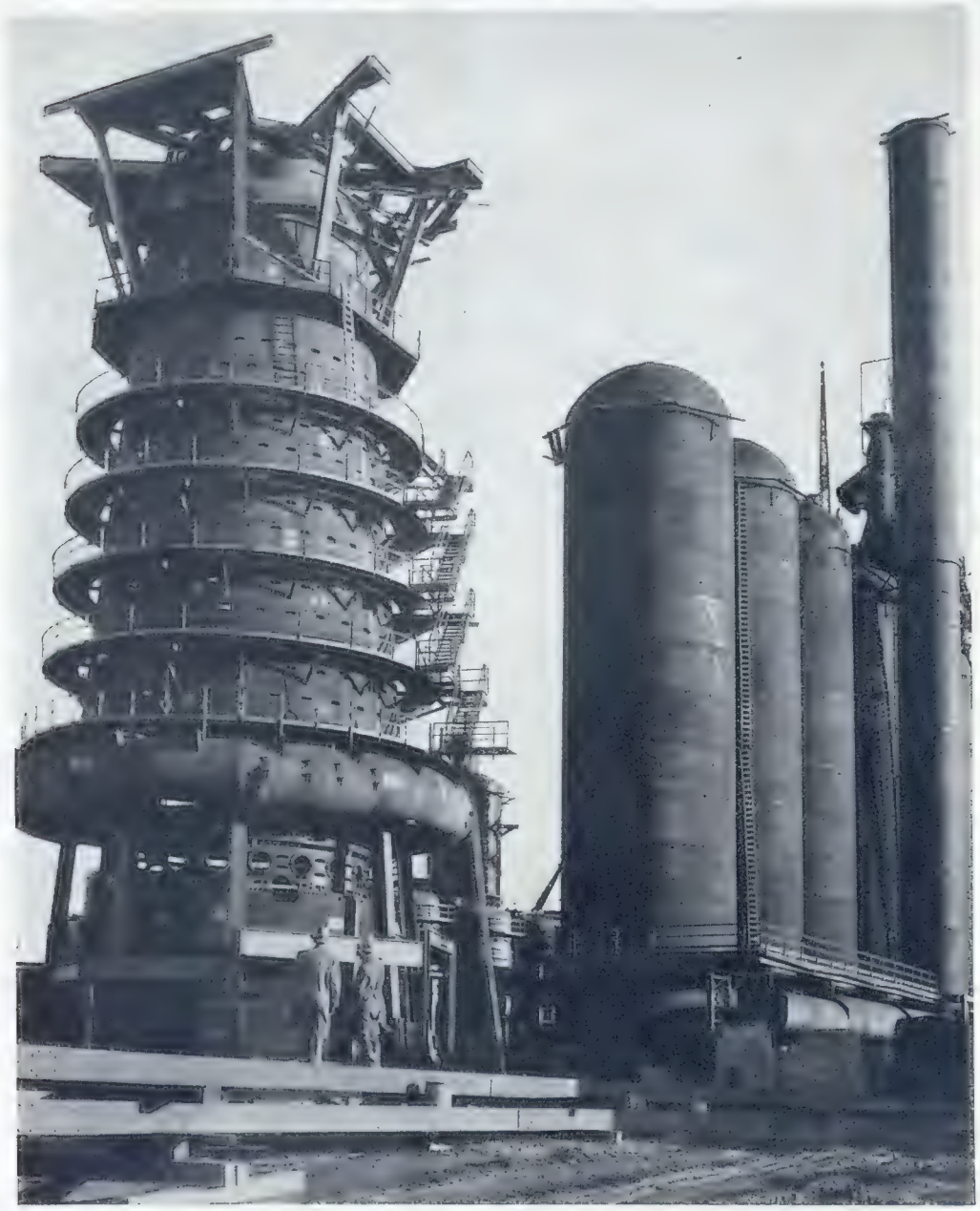


INSIDE BRITAIN'S LATEST STEEL MILLS—A STEEL SLAB WHICH HAS PASSED THROUGH THE FOUR ROUGHING STANDS OF THE CONTINUOUS MILL IS HERE SEEN LEAVING THE LAST STAND AND IS PASSING ON TO THE DELAY TABLE BEFORE ENTERING THE FINISHING STANDS AT THE ABBEY WORKS AT MARGAM: Margam is Britain's third strip mill—but it is the first wide mill, capable of producing 72-in. strip, which the country possesses. This method is vital to the motor manufacturer, when all-welded box-type construction is gaining ground as the technique for mass-producing bodies and chassis in one, a technique demanding as large panels as possible. Four large firms in South Wales have co-operated in this great enterprise.

RUSTON AND HORNSBY'S NEW "BEEVOR" FOUNDRY: This is one of Europe's newest and most mechanised plants, and will produce castings for Diesel engines. On this conveyer system molten metal is poured from casting ladles (supported on overhead runways) into the moulds on the conveyer belt. The moulds then enter the cooling tunnel (at left), and they are later broken open at the pneumatic ram over a suction grid. This new plant has cost £500,000.



THE NO. 2 BLAST FURNACE AND THE HOT BLAST STOVES UNDER CONSTRUCTION AT THE U.S. STEEL CORPORATION'S FAIRLESS PLANT ON THE DELAWARE RIVER AT MORRISVILLE, NEAR PHILADELPHIA: It became known in December 1950 that U.S. Steel had picked Morrisville for this new mill, which is costing half-a-billion dollars and is the largest single wholly integrated mill ever constructed. Work is already far advanced and production will probably begin next summer. The U.S. Steel Corporation decided to erect its new plant at Morrisville because of the recent discovery of a whole mountain of high-grade ore in Venezuela—ore which is now being exploited by U.S. Steel's subsidiary, the Orinoco Mining Company. As that ore had to be waterborne to the United States, the widened Delaware, with its facilities for big freighters, seemed the logical place to bring the raw material. No time has been wasted on the Morrisville project. Six months from now it is hoped the blast furnaces will be in full production in the cause of national defence. The mill will have an ingot ton capacity of 1,800,000 a year. The site which it occupies covers 3,800 acres, lying in the bend of the river north of Philadelphia and just opposite Trenton, New Jersey. The plant takes its name from Benjamin Franklin Fairless, president of U.S. Steel, whose Christian names, of course, call to mind one of the great early figures in "the Philadelphia story."

STEEL, THE VITAL METAL

(Continued from previous page)

into a soaking pit. This is a furnace where they are brought to a correct and uniform temperature for processing. The different ways of working steel into shape are all variations of the simple processes of hammering, pressing and rolling. Hammering and pressing are together known as forging. Small forgings up to, say, 50 cwt. may be shaped under steam hammers—that is, hammers whose descent is accelerated by steam pressure. They can be controlled so as to smash a girder or crack a nut. When an article is required in large numbers the required shape may be obtained by means of a die, half of it carried by the anvil and half by the hammer. The red-hot steel is laid on the anvil, and as the two halves of the die are brought together, the metal takes the shape of the die. This is known as the drop-forging process, and is used to produce such articles as motor-car crankshafts. Small items such as nuts and bolts are produced by forging machines, in which the dies are brought together automatically every fraction of a second. Large forgings such as boiler drums are shaped under heavy hydraulic process. The biggest press in the country exerts a squeeze equivalent to a weight of 6,000 tons.

Though these forgings are extremely important, they use only a small part of the steel made in this country. Out of every ton of steel made, only two-fifths cwt. is cast, rather less than 1 cwt. is forged, and nearly 19 cwt. is rolled. It is in the rolling processes that the most spectacular changes in the British steel industry have taken place in recent years.

The first stage in rolling is to take the ingots from the soaking pit to the cogging or blooming mill. This consists of a massive pair of rollers, through which the ingot is made to pass and repass, the rollers being brought closer together after each pass, until it is reduced to more manageable proportions. The ingot is pushed into position and turned over by mechanical manipulators. The operations are conducted at great speed by a team of three or four men sitting aloft on a control bridge and looking as though they are the crew of an aircraft bringing her in to land. The products of the cogging mill are known according to their size and shape as slabs, blooms or sheet bars, and, after reheating, become the raw material for further rolling.

A rolling mill may be reversible or continuous. In a reversible mill the steel is passed to and fro between rollers until it is worked to the desired shape. In a continuous mill it passes without stopping through a succession of stands, and as it increases in length at each operation, each stand is run faster than the one before it, so that the rolled product may eventually be travelling at 24 miles an hour. Billets, small sections and bars may be produced in continuous mills, but the most important use is to produce long strips of steel which can

THE NEW INDUSTRIAL SKYLINE—THE MELTING-SHOP BUILDING AT THE ABBEY WORKS, MARGAM, SOUTH WALES: The new Abbey works occupies the site of a marsh, an area twice the size of Hyde Park having to be raised 12 ft. to take the new buildings. In order to sustain the enormous weight of the plant, it has been found necessary to erect the works on pre-cast piles. The entire integrated works is 4½ miles long. The exterior, with its smooth walls and clear stone construction, alternating curved glazing and solid concrete blocks, is outwardly most pleasing. Functionally it gives the maximum light and space for the workers.

be cut to the size desired by the ultimate user. The first strip mill in this country was opened by Richard Thomas and Baldwins at Ebbw Vale in 1938; a second was built by John Summers at Shotton; and a third has recently been completed by the Steel Company of Wales at the Abbey works, Margam.

The hot strip as it leaves the continuous hot mill is usually formed into large coils, and these are the raw material for the cold reducing mill. The steel manufacturer with his rolling resembles the barber with his shampoo: he likes to "finish off cold." In the cold reducing mill the coils of now cold strip are run through a final series of rollers which bring them to the dimensions sought. The strip can easily be made as thin as desired, but there has lately been a shortage of wide strip, and the Abbey works is the only one capable of producing strip 74 ins. wide. The steel strips are now ready to be cut up into sheets for dispatch to the motor manufacturers for use in automobile bodies or to the tinplate manufacturers for coating with tin; these are the two main uses of strip steel. At the Ford works at Dagenham all the processes from the blast furnace to the making of the motor-car are done on one site, and at the Richard Thomas and Baldwins works at Ebbw Vale every process is carried through in a continuous sequence from the smelting of the ore to the plating with tin. Economically, this would have been the ideal arrangement for the Abbey works of the Steel Company of Wales, but for sociological reasons the tinplate works was built at Trostre, near Llanelly, the traditional centre of tinplate manufacture.

The proper location of a steel works is a big problem. The ideal site is one where the raw materials—iron ore, coal and limestone—are found near to ample supplies of labour and good markets; but this combination, it has been well observed, is seldom met "save in the pages of the text-books and the dreams of business men," and in practice a compromise has to be made. The first British centres of the modern steel industry were established in South Wales, on the north-east coast and in Scotland in places where the raw materials were all to be found. In the course of time most of the deposits of

CHARGING MOLTEN METAL INTO AN OPEN-HEARTH FURNACE: An impression of one of the giant ladles used by the Steel Company of Wales at Margam.

rich ore in this country were exhausted. Two answers were possible. One was to import rich ore from abroad, the other to find ways of using the low-grade ores of the Midlands and East Anglia. Both solutions have been adopted. Where the decision is taken to rely on imported ore, there are economic advantages in siting new works on the coast adjacent to a coalfield. In this way a long railway haul is avoided, both for the incoming ore and for the outgoing export products. (The steel industry has always been a big exporting industry.) As a result of such considerations the steel industry died in Merthyr Tydfil but was reborn in Cardiff. The steel works in and around Middlesbrough were already mainly situated on tidal waters, and with the decline of the local Cleveland supplies were well placed for importing ore. The Scottish works, not being well placed for importing ore, have come to rely very heavily on scrap. Where the decision was taken to build new works on our home ore-beds, new steel towns, such as Scunthorpe, in Lincolnshire, and Corby, in Northamptonshire, have been created—towns without grandfathers, they have been called. When Stewarts and Lloyds, the famous Scottish manufacturers of steel tubes, decided to build at Corby in 1934, many of their workers followed them, and Corby is now a little bit of Scotland in Northamptonshire. But when Richard Thomas proposed a similar move from South Wales there were strong protests, and the new works were eventually built at Ebbw Vale on

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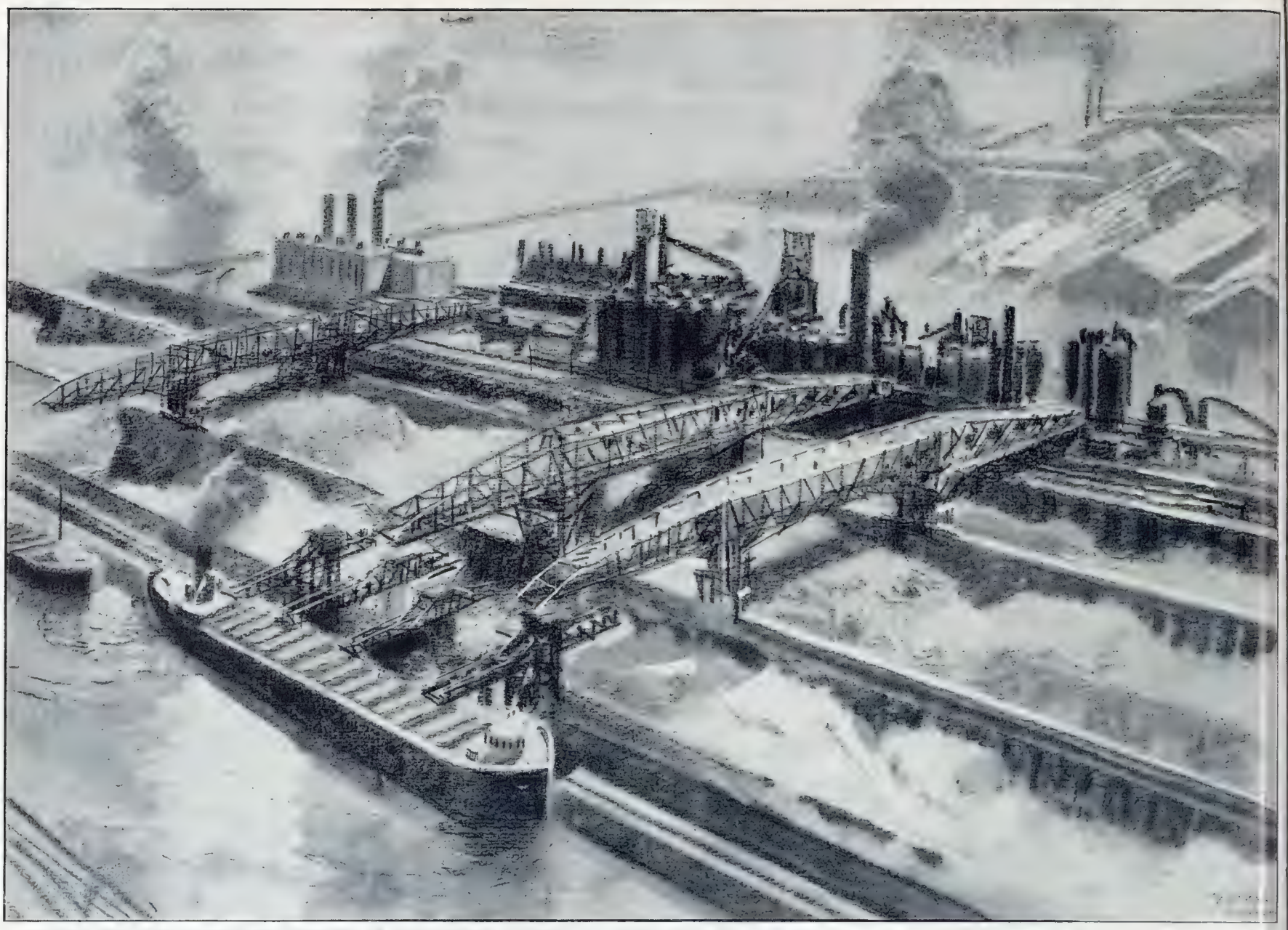

HANDLING ORE AND LIMESTONE SUPPLIES IN THE UNITED STATES—AN ARTIST'S IMPRESSION OF THE DOCKS AT GARY, INDIANA, ON LAKE MICHIGAN, SHOWING THE ELECTRICALLY-OPERATED ORE-UNLOADING EQUIPMENT: Each unloader has a mechanical grab which descends into the cargo-hold of the ore-freighter and then transfers the load either to the blast furnaces direct, to the storage bays on the quayside, or else to railway cars for distribution to blast furnaces elsewhere. Owing to the freezing of the Great Lakes in winter, the steelworks of the Northern United Carnegie—Illinois Steel Corporation have to carry large stocks of ore to cover their winter operations.

STEEL, THE VITAL METAL

(*Continued from previous page*)

the principle of taking the work to the workers rather than the workers to the work. Each case must be considered on its merits, and in a region where traditional skills have developed this may outweigh other considerations. South Wales is the traditional home of the tinplate industry, thanks to an alliance a long time ago between Welsh iron and Cornish tin, just as Sheffield is the traditional home of alloy steels; and although the Sheffield district produces only about two-fifteenths of the steel produced in Great Britain, so precious are these alloy steels that the value of the Sheffield output is equal to all the remaining production.

It may seem precarious to have a town dependent on a single industry, as Scunthorpe and Corby are, but they can be sure, at any rate, of not having their raw materials cut off; and if a slump should again hit the steel industry, as their costs of production are relatively low, they would probably ride the storm best.

But there is no present cause to fear a slump. Every ton of steel that can be produced is needed. There is, indeed, a serious shortage both of pig-iron and of scrap, and this, rather than lack of demand, may cause some temporary dislocation. The industry is now suffering from the expedient in 1950 of turning round ships that would have brought in iron-ore to bring in foreign coal instead; and the recovery of the German steel industry means that Germany can no longer supply the same quantities of scrap as in earlier years.

The high demand is, of course, sustained by the needs of defence. It is one of the problems of the steel industry that it has to be prepared to meet requirements far above the normal peacetime demand, and as capital investment in the steel industry is higher than in any other great industry this means that when demand falls away many hundreds of millions of pounds of capital expenditure have to be carried by a production far below that for which the industry is built. The new Abbey works in South Wales has cost more than £60,000,000 to build. It is estimated that for each worker at the Appleby-Frodingham works of the United Steel Company at Scunthorpe the management makes a capital investment of £200 a year—in other words, in addition to paying a high wage to each worker the company pays £4 a week for his tools.

But if the demand should again fall, the industry is, at any rate, in a far better position to face foreign competition than it has been since the First World War. Under the shelter of the first import duties in foreign steel in 1932, and under the leadership of the British Iron and Steel Federation established in 1934, the industry has gone through a technical revolution. The transformation had gone sufficiently far by 1939 for the industry to meet all the demands of the war. After the war the industry drew up a plan of modernisation under which £240,000,000 was to be invested in new plant. It is a proof of the present efficiency that British steel has been since the war the cheapest of any major producing country in the world; and its quality is second to none. As part of the modernisation, the amount of coal needed to make on the average a ton of finished steel has dropped spectacularly; this is largely due to the efficient use of heat produced during processing.

This modernisation has been accompanied by a regrouping of the capital in the industry. Under modern conditions, steel can be produced efficiently only in large units. The great United Steel merger had been formed even before the First World War came to an end, and after the Second World War four famous firms combined to create the Steel Company of Wales for the purpose of modernising the existing works at Port Talbot and Margam and creating the new Abbey and Trostre works. But very often the famous old names were kept in the mergers—Guest, Keen and Baldwins at Cardiff, Richard Thomas and Baldwins at Ebbw Vale, and so on. It is the greatest tribute to the goodwill associated throughout the world with these names, some of them linked with steel-making since the eighteenth century, that they were preserved even under nationalisation. All over the world the name of Dorman Long is synonymous with bridge-building, Stewarts and Lloyds with steel tubes, and so on.

The industry is not only in a strong technical position but is happy in its labour relationships. Though local disputes occur from time to time, there has been no national stoppage of work in the steel industry — apart from the general strike of 1926, which had nothing to do with steel—in the whole of the present century. The British Iron, Steel and Kindred Trades Association, the trade union organisation of the industry, has had leaders of real statesmanship, such as Sir Arthur Pugh, who has just written its history under the title *Men of Steel*, and its present general secretary, Mr. Lincoln Evans. The steel workers are to-day the aristocracy of labour. In former days processes were crude and the work exhausting. Now the main processes are controlled from a distance by buttons and levers, and only in old mills or in special processes is hard manual slogging to be seen. An old steel worker from Merthyr was taken one day into the melting shop at Ebbw Vale; he gazed in silence for a few minutes and then commented, "Blimey, I was born fifty years too soon!"

The modern processes have been matched by changing-rooms, canteens and welfare departments. The principal extensions of and additions to the Appleby-Frodingham works of the United Steel Company since the war have been entrusted to one of the most famous architects of the day, and great care has

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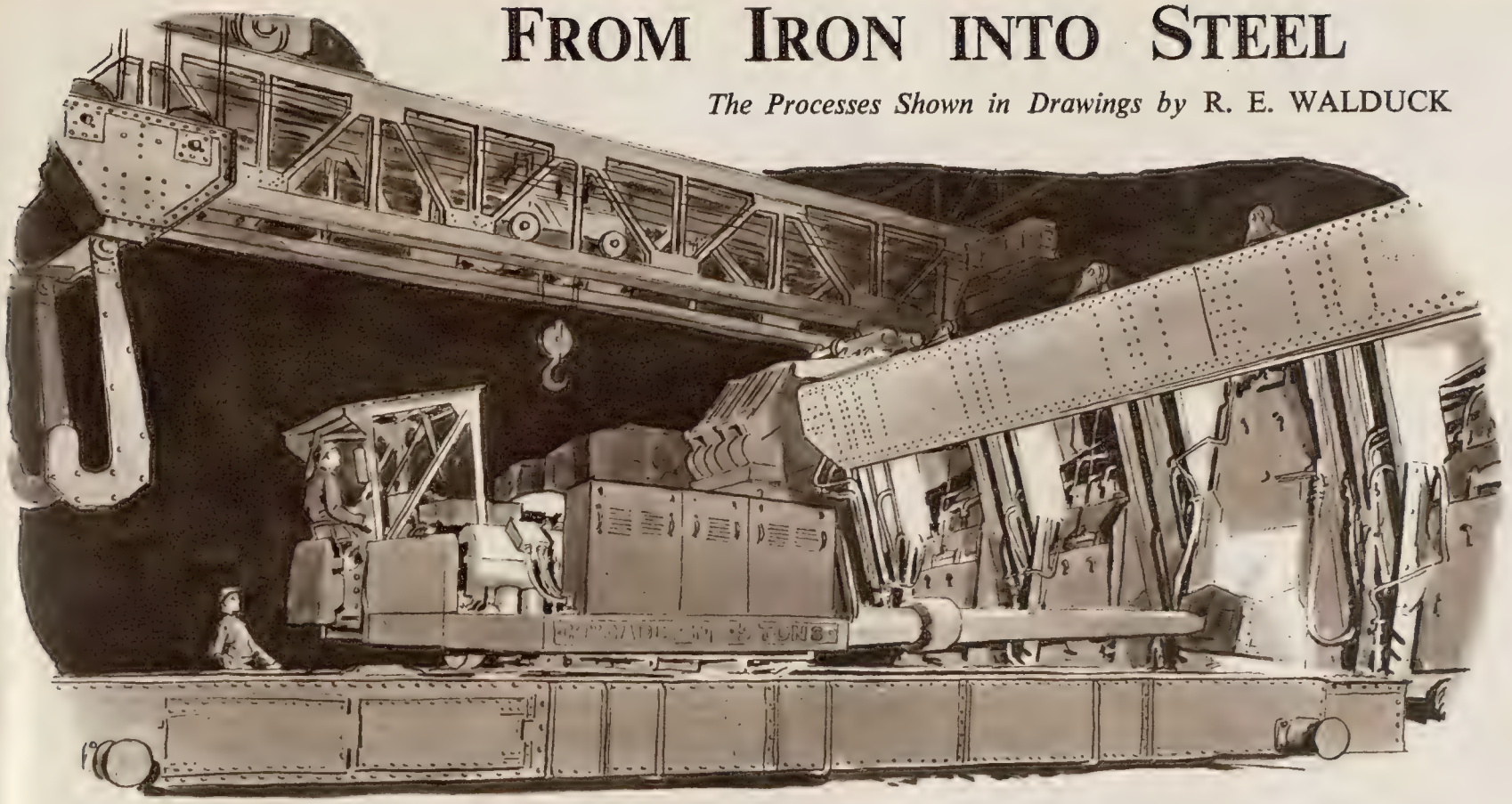
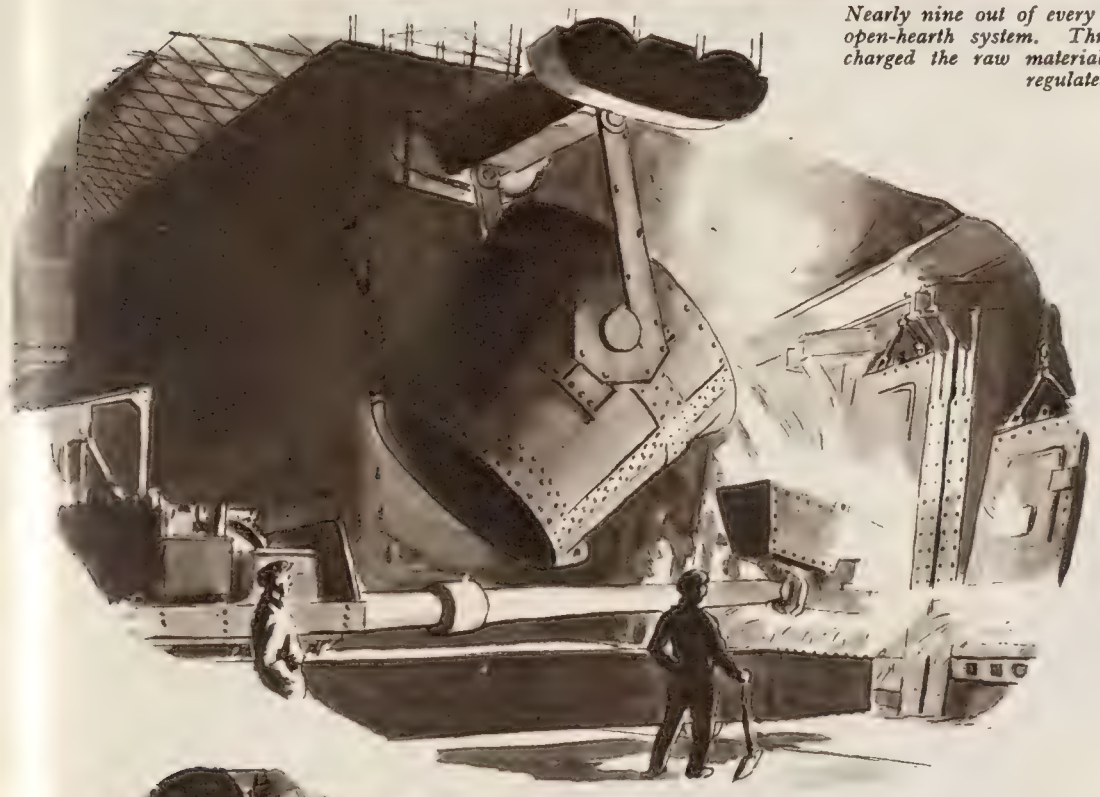
WHEN THE MOMENT HAS COME FOR THE STEEL TO BE TAPPED: It is passing from the furnace into one of the huge firebrick-lined ladles, from which it will in turn be teemed into ingot moulds to cool somewhat before further processing. The man on the furnace stage is shovelling in ferro-manganese. It is his task to control the chemical composition of the final product, and it is he who takes the decision when to tap the furnace.

From Iron into Steel

The Processes Shown in Drawings by R. E. WALDUCK

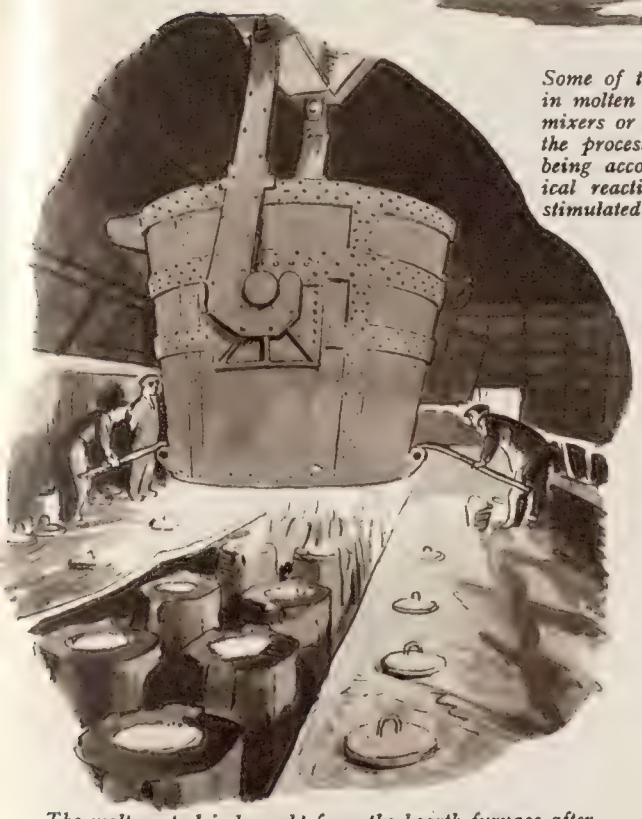


Nearly nine out of every ten tons of steel produced in Britain are made by the open-hearth system. Through the doors in the front wall of the furnace are charged the raw materials, mainly the pig-iron and scrap in their carefully regulated quantities, order and compositions.

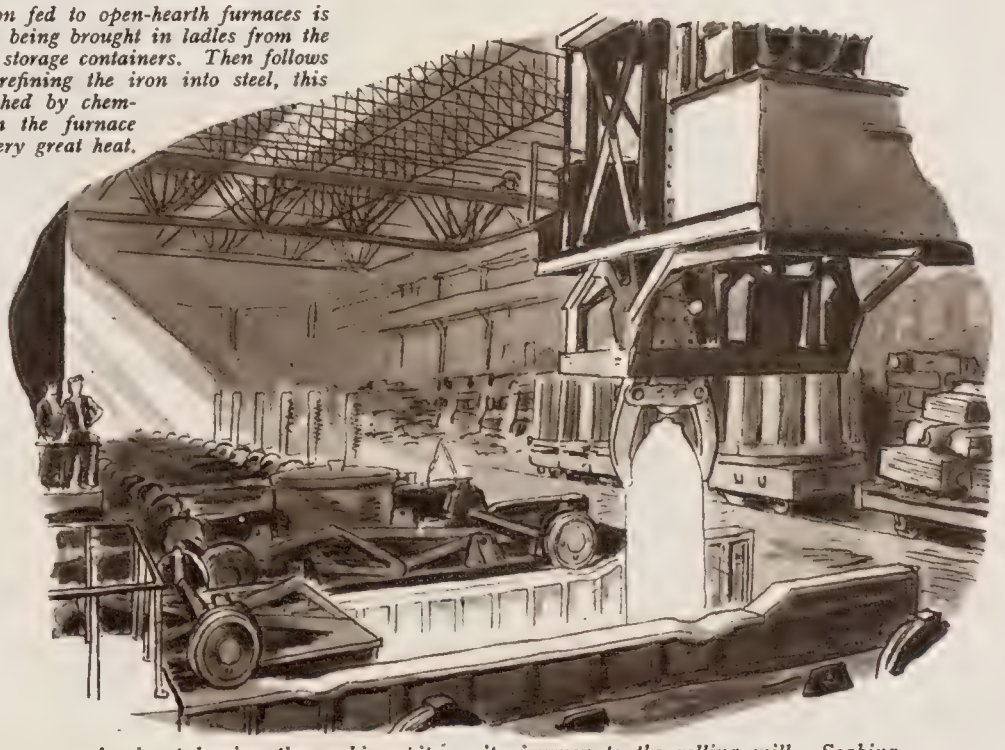


The skill and judgment of the furnaceman in steelmaking are vital. He has to work his furnace at the proper temperature and pressures, and he has to fettle it, as running repairs are called.

Some of the iron fed to open-hearth furnaces is in molten form, being brought in ladles from the mixers or great storage containers. Then follows the process of refining the iron into steel, this being accomplished by chemical reaction in the furnace stimulated by very great heat.



The molten steel is brought from the hearth furnace after tapping and is teemed into ingot moulds. This operation may be carried out in several different ways. Top casting direct from the ladle to the mould is the usual method.



An ingot leaving the soaking pit on its journey to the rolling mill. Soaking pits are used for bringing the ingots up to the required temperature for rolling, which is normally about 1,200° to 1,300°. These pits are insulated furnaces maintained at the necessary heat partly by the radiation of the ingots.

DEMOLITION ON THE SOUTH BANK

The Clearance of Buildings on the Festival Exhibition Site Began Last Week

THE END OF A GREAT EXHIBITION—WORKMEN BEGIN THE TASK OF DEMOLITION ON THE SOUTH BANK : With picks and pneumatic drills these men are wrecking the Sea and Ships Pavilion of the South Bank Festival Exhibition after the work of demolition had begun last week. Mr. I. J. Hayward, leader of the London County Council, said at a Press conference that it was hoped that by Easter there would be a riverside promenade on the site, open to the public during the daytime. Temporary gardens are to be made on the cleared land, and it is hoped that those to be placed between Waterloo Bridge and Rodney Pier will be opened on May 24. The Ministry of Works has decided to go ahead with the demolition of the Dome of Discovery, but, at the time of writing, nothing has been decided about the Skylon.

NO TIME FOR REFLECTION : Two men of a demolition squad on the South Bank, reflected in the dismal puddle, are directed in their work of oxy-acetylene cutting by an engineer.

DOWN WITH THE SEA AND SHIPS : Meticulous modelling telling the story of Britain's maritime history and heritage is torn down by the picks of a demolition squad. The Lion and Unicorn Pavilion, the Homes and Gardens and Television Pavilions are also being demolished.

DEMOLISHING A BRICK WALL ON THE SOUTH BANK PROMENADE : An interim scheme has been laid down for the construction of a public promenade along the riverside and also for temporary gardens.

THE COMPLICATED TIPPING FOUNTAIN STILL STANDS AMIDST A SCENE OF DESOLATION : While a lorry is loaded with salvaged timber from the wreckage, workmen break up the reinforced concrete of a cat-walk at the Sea and Ships Pavilion near the promenade.

ELTHAM'S RESTORED GLORIES

A FAMOUS CHRISTMAS RESIDENCE OF THE SOVEREIGNS OF ENGLAND, AND NOW THE INSTITUTE OF ARMY EDUCATION

The first Palace at Eltham was built by a Bishop of Durham in mediæval times, but of this few traces remain, as the Great Hall was almost completely rebuilt by Edward IV in the year 1479. From the time of Henry III to that of James I, Eltham was a favourite Christmas residence of the sovereigns of England. The Palace was still largely intact at the time of the Commonwealth, but in subsequent years it fell into disrepair.

Early in the present century deterioration was rapid, and if Mr. Stephen Courtauld had not stepped in in the '30's the place would have crumbled into hopeless decay. With Mr. J. W. Hopkins taking charge of the work, Eltham took on a new aspect. As in all such work there are, of course, gains and losses, and if the Palace did lose something of its ancient patina, it gained immeasurably in other directions. Mr. Courtauld demolished some of the buildings adjoining the Great Hall, as these were obviously out of keeping, and he erected instead a modern house of superb proportions.

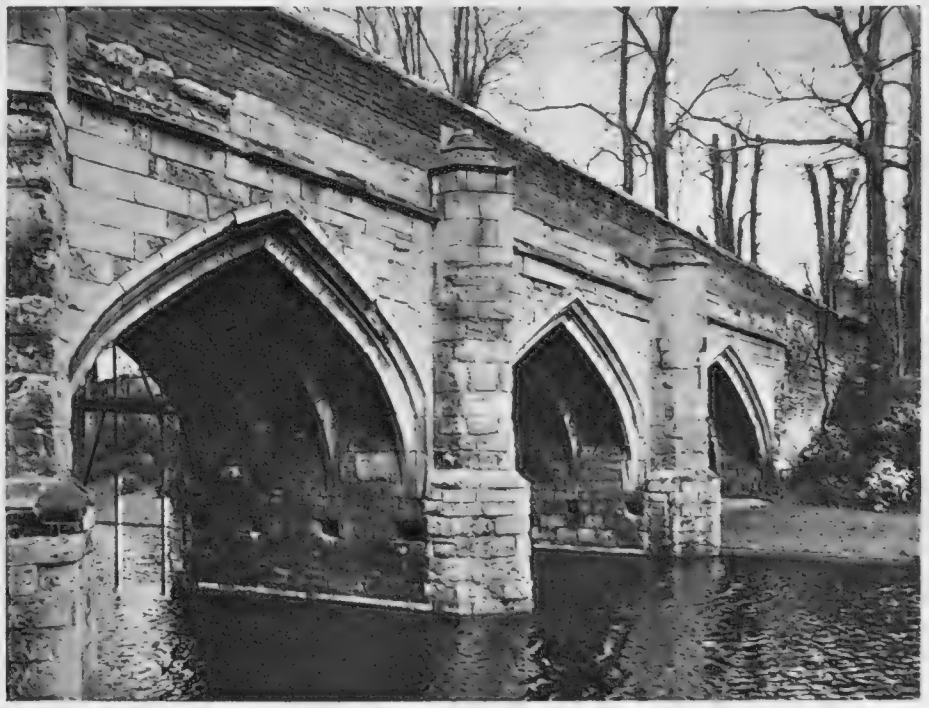
The latest work of restoration is largely concerned with bomb damage sustained in the Second World War.

THE REMAINS OF THE TUDOR PALACE OF ELTHAM AND PART OF THE COURTAULD EXTENSION VIEWED FROM THE SUNKEN GARDEN: Eltham Palace, which was restored by Mr. Stephen Courtauld in the '30's, has lately been undergoing further restoration and general overhaul, repairs being carried out to the roof, which during the Second World War was damaged by a bomb.

EXAMINING PARTS OF THE CELEBRATED HAMMER-BEAM ROOF FOR TRACES OF WOODWORM: A workman standing on scaffolding high up in the roof of the Banqueting Hall at Eltham Palace.

THE GREAT HALL AT ELTHAM AND THE COURTAULD EXTENSION, THE FAMOUS BUILDING WHICH NOW ACCOMMODATES THE INSTITUTE OF ARMY EDUCATION: In the '20's Eltham Palace was drifting to decay. Mr. Stephen Courtauld decided to rescue it and also to erect the building seen on the right. The work was carried out under the direction of Mr. J. W. Hopkins, who was also responsible for the restoration of St. George's Chapel, Windsor.

THE HAMMER-BEAM ROOF OF THE BANQUETING HALL: Beneath these rafters must have taken place many a revel in the days of Eltham's glory.



THE BRIDGE OVER THE ELTHAM MOAT WHICH IS TO BE RESTORED: This was built by Richard II at the close of the fourteenth century, and it is now suffering severely from decay.

SPORT

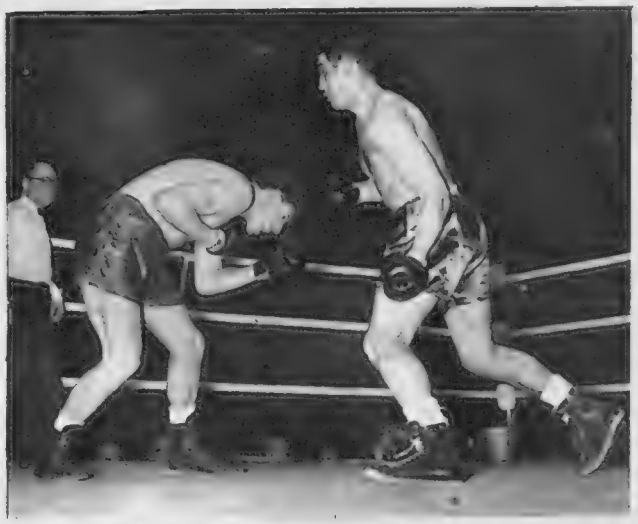
OVER THE STICKS, IN THE RING and ON THE TIDEWAY

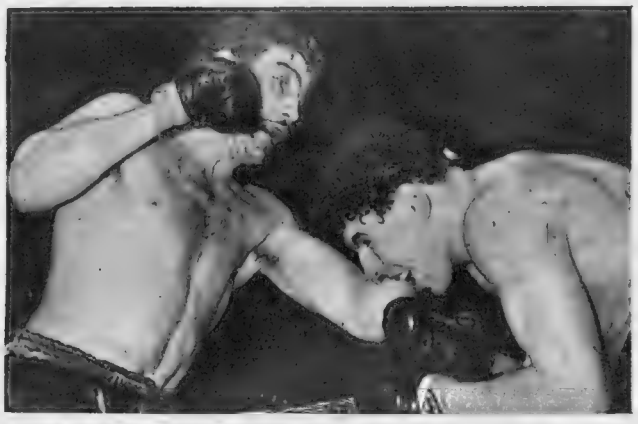
On right—

The victory of the seven-year-old 'chaser Halloween, in the Grand National Trial at Hurst Park, threw little light on the coming big race at Aintree; for Halloween has been taken out of the Grand National, probably on account of his age. Another year on park courses and no doubt Halloween will be considered sufficiently mature for the Grand National. Halloween's convincing success at Hurst Park was his first in the hands of a professional jockey. He has usually been ridden by Captain Smalley, his previous owner, but in this race F. Winter had the mount. Halloween's next objective is the Welsh Grand National.

OVER THE SECOND FENCE AT HURST PARK AT THE START OF THE GRAND NATIONAL TRIAL: From left to right are: Lieut.-Colonel J. F. Harrison's Printers Pie, ridden by S. Barnes; Lieut.-Colonel E. D. Harris St. John's Court Painter, ridden by F. Carroll; Lord Leigh's Glen Cottage, ridden by T. Marbett; Contessa di Sant Elia's Halloween, ridden by F. Winter; and Major W. J. Anstruther-Gray's Bruno II, ridden by R. Harrison.

TAKING THE FIRST JUMP IN THE ADJACENT HUNTS LADIES' RACE AT THE MANOR FARM, HOLLINGBOURNE, KENT: This was at the first post-war point-to-point meeting of the Royal Engineers Draghounds. There were five races on the card. The two riders on the right, it will be seen, are well balanced after crossing this first obstacle.





THE BATTLE FOR THE BRITISH HEAVYWEIGHT BOXING CHAMPIONSHIP: How Jack Gardner, the reigning champion, went down to defeat before Johnny Williams, the Welsh-born boxer from Rugby. *Top*—Williams ducks to avoid a swing by the ponderous but relentless Gardner. Gardner had the advantage of well over a stone in weight. His chief weapons were his right upper-cuts and left hooks. Williams dominated the early rounds with his left leads. *Centre*—A right from Johnny Williams which made Gardner grimace. *Below*—Gardner has missed with his left, his glove travelling behind Williams's neck. In the closing stages of the fight there were moments when Williams was in danger of being knocked out, but he not only survived to the end, but won handsomely on points. Williams has speed, but lacks a decisive punch.

PREPARING FOR NEXT SATURDAY'S BOAT RACE—THE TWO BOATS UNDER CONSTRUCTION AT HAMMERSMITH: Mr. George Sims superintends the building of the two boats at his boat-building yard at Hammersmith. *Left*—Mr. Sims supervises the planking of the Oxford boat and, on right, he inspects the Cambridge boat as it nears completion. The two boats are 62 ft. 6 ins. long, 2 ft. wide and 10⅛ ins. deep; they each weigh 280 lb. and cost £300. They are made from British Honduras cedar planking, with ribs of English sycamore and seat-bearers and keel of Canadian spruce. Both boats, which took some three weeks to construct, are built to take 13-stone average weight of crewsmen.

THE "CITY OF PORT ELIZABETH" WHEN COMPLETED: This is an artist's impression of the new Ellerman liner which is shown in process of being launched in one of the pictures reproduced below. She is a passenger- and cargo-liner of 12,500 tons, and is the first of four sister-ships under construction in the Walker Naval Yard.

ON THE STOCKS BEFORE LAUNCHING: The bows of the *City of Port Elizabeth* beside those of her sister-ship, the *City of Exeter*, in the Walker Naval Yard of Vickers-Armstrongs.

LAUNCHING THE "CITY OF PORT ELIZABETH"

A NEW ADDITION TO THE ELLERMAN FLEET

The *City of Port Elizabeth*, a passenger- and cargo-liner of 12,500 tons, was launched last week by Mrs. A. L. Geyer, wife of the High Commissioner for the Union of South Africa, at the Walker Naval Yard of Vickers-Armstrongs Limited. The first of four passenger- and cargo-liners under construction at the Naval Yard for the same owners, the *City of Port Elizabeth* is the first passenger ship to be launched for the Ellerman Lines since the end of the war. When completed she will offer travellers a notable advance in the standard of passenger accommodation for a vessel of her size, and she will undoubtedly prove a most popular addition to the Company's service between London and South Africa. The new liner will carry 106 passengers on the Ellerman and Bucknall Line service between London–Las Palmas (or Teneriffe), Cape Town, Port Elizabeth, East London, Durban, Lourenco Marques and Beira.

In common with other important shipping lines, the Ellerman Lines suffered extremely heavy losses during the war, the number of vessels lost through enemy action totalling sixty, of which twelve were passenger-liners. The construction or acquisition of fifty-six cargo vessels since 1943 has restored the Company's freight-carrying capacity, and this latest launch is an important stage in the expansion of the company's South African passenger service.

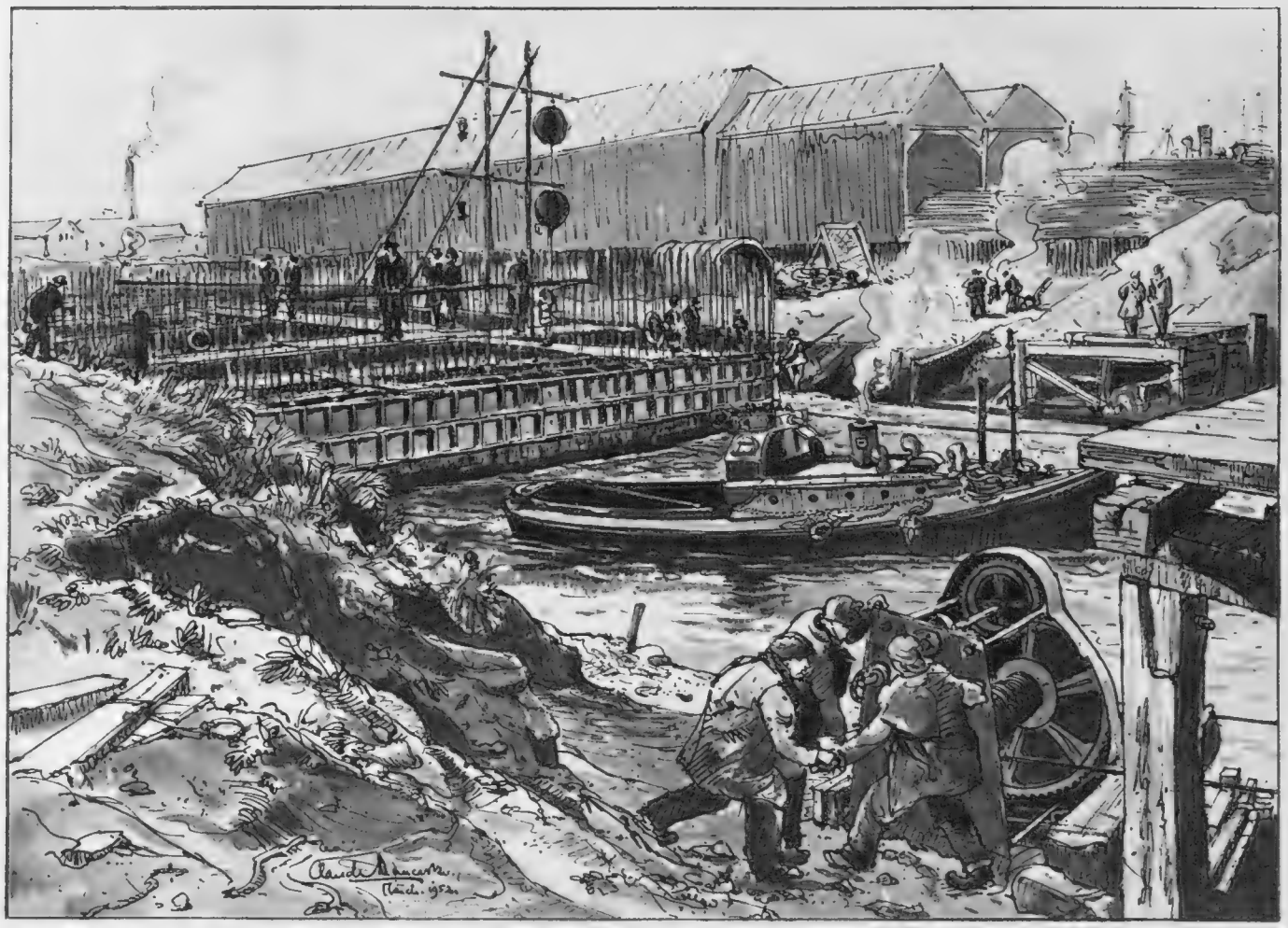
At last week's launching messages were received by the builders and owners from the Mayor and citizens of Port Elizabeth.

THE LAUNCHING CEREMONY: *Left*—Mrs. A. L. Geyer, wife of the South African High Commissioner, being presented with a bouquet by Miss Elizabeth Mostyn, a member of the clerical staff in the Walker Naval Yard, before the launching of the *City of Port Elizabeth*. Standing behind Mrs. Geyer is Mr. Muirhead, of Vickers-Armstrongs, and behind him are some of the workers who have been helping to build the new liner. *Right*—The graceful new vessel entering the water.

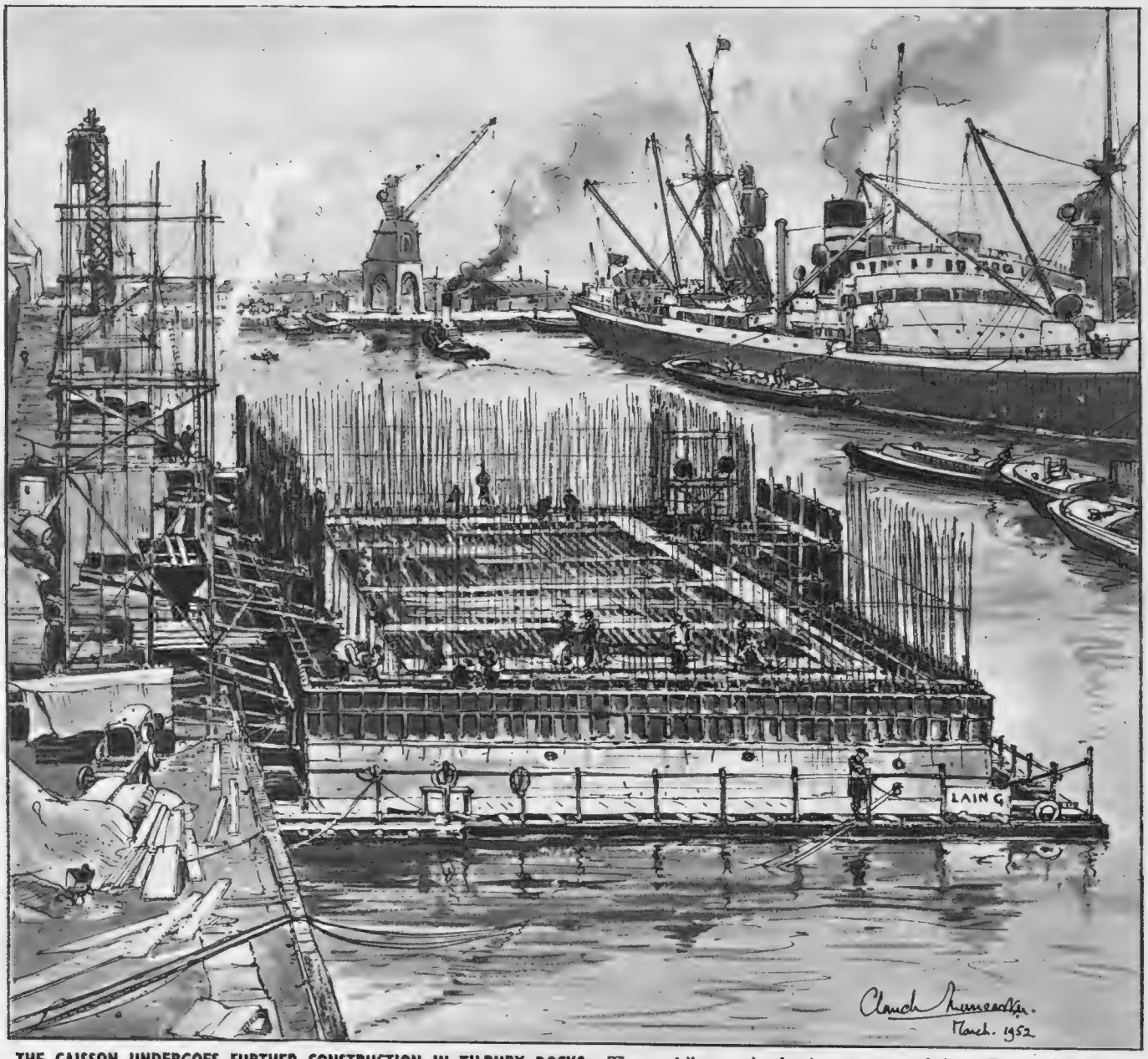
A THAMES JETTY APPEARS OVERNIGHT

The 4,200-ton Caisson, "Flying Red Horse," is Floated Down the Thames and Sunk in Position Alongside the Coryton Refinery

SPECIAL "SPHERE" DRAWINGS BY CLAUDE MUNCASTER, R.W.S., R.B.A.



"FLYING RED HORSE" GETS UNDER WAY—THE 4,200-TON CAISSON OF REINFORCED CONCRETE IS TOWED OUT FROM RED LION WHARF, GRAVESEND, AT THE START OF THE JOURNEY TO THE NEW REFINERY OF THE VACUUM OIL COMPANY AT CORYTON: The caisson, which is built on the Mulberry Harbour principle, comprises the main section of the water-intake jetty at the refinery. It will eventually house the pumps that will provide the refinery with a daily supply of 45,000,000 gallons of water for cooling purposes. Following preliminary construction in dry dock at Gravesend, it was completed afloat at Tilbury. Several days ago it was towed from Tilbury and sunk in position alongside the new refinery. In this drawing Claude Muncaster shows the caisson being towed out to Tilbury. To help steady her on her course through the lock gates, winches were used in addition to the small but powerful Diesel tug. With only a foot to spare on either side and 6 ins. of water beneath her, the caisson was manœuvred into the open river for her passage to Tilbury without mishap. The total height of the unit when it left Tilbury was 52 ft. 6 ins. Its overall length is 100 ft., with a width of 53 ft.; there are six main compartments.



THE CAISSON UNDERGOES FURTHER CONSTRUCTION IN TILBURY DOCKS: The partially completed caisson was towed from Gravesend to Tilbury at the end of last November by three tugs, one on each side and one in front. At Tilbury, where it occupied a liner berth, the unit was surrounded with a floating boom to protect it from drifting craft. Concrete was poured from scaffolding erected inside the now floating unit and water ballast was introduced from time to time in order to keep the shuttering within reach of the joiners and steel-fixers working on the floating boom.

The practice of employing reinforced concrete caissons for various kinds of foundations is a well-established civil engineering technique, but it is exceptional for such a structure, weighing 4,200 tons, to be towed a long distance from its place of construction to its final site. The design and construction has been carried out by the British firm of civil engineering contractors, John Laing and Son, Ltd., on behalf of the Lummus Company Ltd., of London and New York, the contractors for the Coryton Refinery.

For the purpose of construction, it was necessary to find a dry dock in which the bottom portion of the caisson could be constructed to a height governed by the depth of water available, subsequent lifts of concrete being added later in a wet dock. A dry dock was obtained at Gravesend, which could be adapted to provide a firm base for the structure. The first stage of the preparatory work was to close the dock entrance with a ballast-filled sheet piling dam able to withstand the water pressure due to the full tidal range. A level concrete screed was then laid in the bottom of the dock and hollow tiles were placed on this, covered by a layer of building paper, upon which the floor of the caisson was laid. The partially-constructed unit was later floated off the hollow-tile base when water was admitted to the dock at high tide.

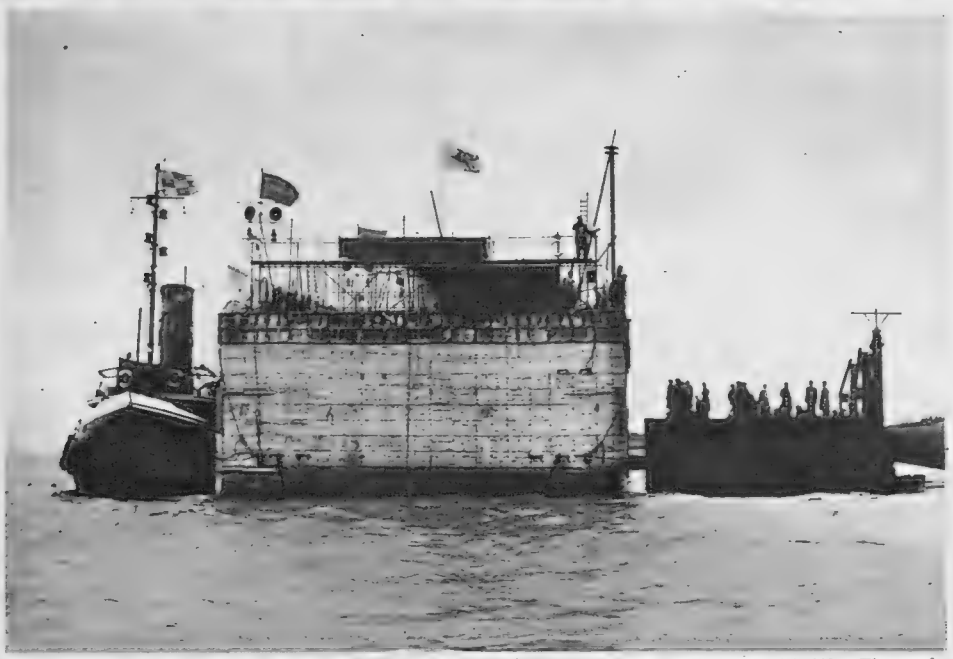
Concreting of the floor and side-walls proceeded in this dock to a height of 12 ft. 6 ins. The caisson was tested for watertightness by filling it with water and waiting for the tide to fall, this being carried out at the stage when the unit had been finished to the 12 ft. 6 ins. level and the sheet pile closure dam had been removed. The work at Gravesend was completed in four months and on November 30, 1951, the partially-completed unit was towed across to Tilbury.

When construction at Tilbury reached the total height of 30 ft., all water ballast was removed and a bracketed scaffold erected around the caisson. Later, 600 tons of concrete was placed in the bottom of the caisson to ensure its designed draught of 29 ft. when being towed to Coryton. As construction proceeded, great care was taken to prevent listing by suitable adjustment of ballast, and the draught was carefully checked every day.

Additional developments to the unit will include a steel structure on box piles which is designed to carry pipes from the intake to the shore. A concrete roadway, carried on steel-work and box piles, will give access to the shore from the eastern end of the unit and enclose it on three sides. This structure, together with an extension at the western end, will also serve to protect the unit from damage by drifting craft.

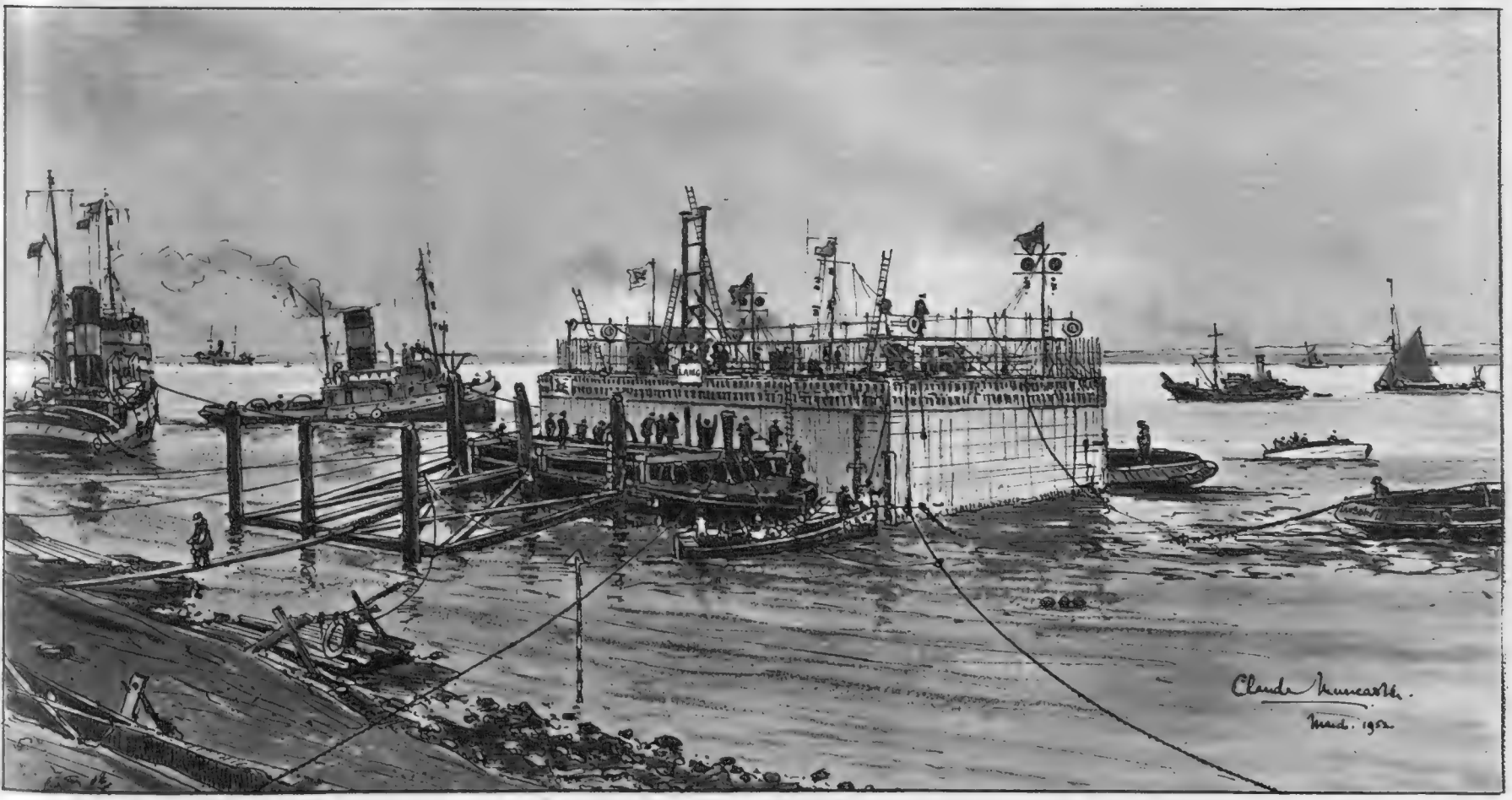
On right—**FLOATING DOWN THE RIVER ON THE EBB-TIDE, WITH FOUR TUGS IN ATTENDANCE :** The tow of the caisson, which had a draught of 29 ft., took six hours. The leading tug, *Rumania*, holds the record for the longest tow, which was established in 1947 when she towed two corvettes from Plymouth to Shanghai. From there she went on to Sydney, where she picked up a 7,700-ton twin-screw ship and towed her to Genoa. She also towed the four-masted barque *Viking* from the West India Dock to Antwerp in 1947.

Below—**THE TOWING CONVOY STEAMS IN LINE AHEAD FORMATION DOWN THE THAMES :** The caisson was built by John Laing and Son, on behalf of the Lummus Co., Ltd., the principal contractors for the Coryton Refinery. Local conditions at Coryton prevented building the caisson in position within a cofferdam in the usual way.



JUST BEFORE THE CAISSON WAS SUNK IN POSITION ALONGSIDE THE NEW REFINERY : The unit was held in check during the operation by the tug seen on the left of the picture.

Below—**THE END OF THE JOURNEY—"FLYING RED HORSE" IN POSITION AND SUNK AT CORYTON :** There was a strong breeze during this operation which made successful achievement more difficult, and caused some small delay, and some anxiety, as it was essential that "Flying Red Horse" should be sunk on her exact bearings during the short spell of slack water before the flood began to flow again. Four winches were used on shore. The wires from these are shown in the drawing. A diver was in readiness, and his craft, *P.L.A. No.* 2, can be seen at the near corner of the great concrete caisson. The two black balls with the flag above is the "wreck" signal. The four tugs from left to right are, *Rumania*, *Cervia*, *Contest* and *Napier*; all but *Contest* belong to Watkins.



SIX THOUSAND MILLION MILLION MILES AWAY

THE MOUNT PALOMAR TELESCOPE PENETRATES THE REMOTE GALAXIES OF THE UNIVERSE

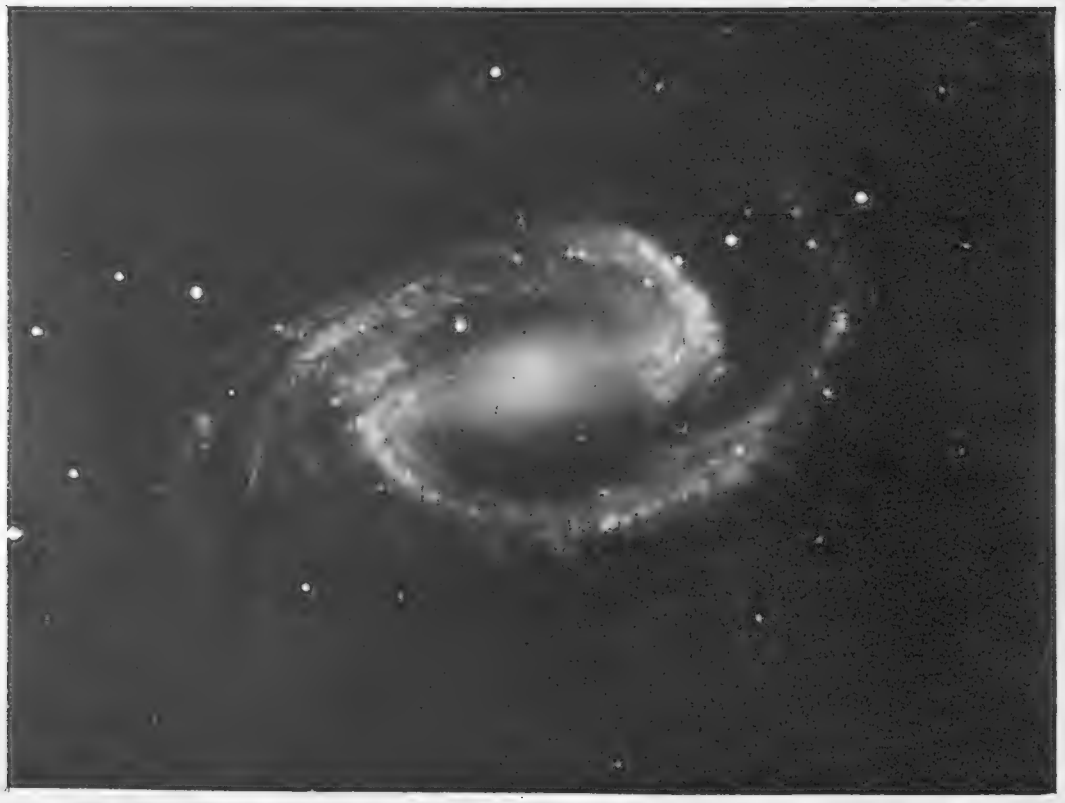
To-day, on the summit of Mount Palomar, in the Californian ranges, the American astronomers are conquering new worlds, using the mighty new 200-in. Cassegrain telescope now installed in the Hale Observatory to penetrate some of the remote galaxies of the universe.

As a result of the development of new, highly-sensitised photo-electric cells, which can convert the faint light of distant stars into electrical impulses, it is now possible to bring remote nebulæ within the realm of active astronomical research at Mount Palomar, and in the years ahead it may be anticipated that a spectacular series of photographs will become available as the Hale Observatory is specialising largely in photographic observations.

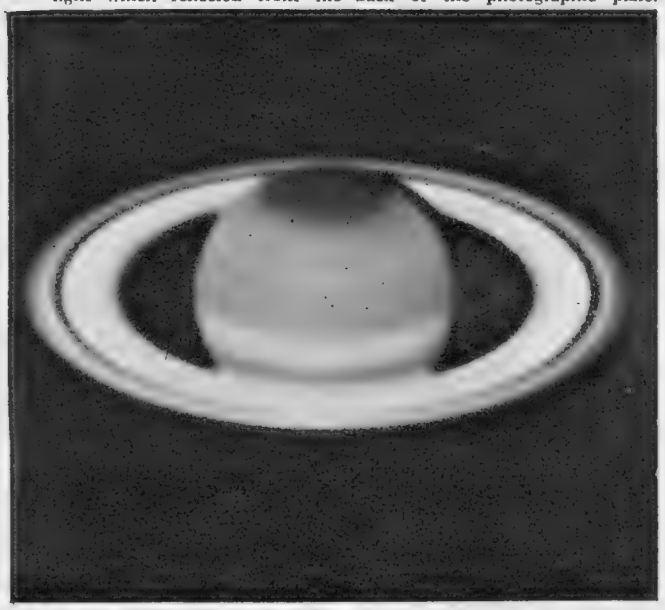
The announcement of the discovery of new methods of making deep penetrations into cosmic space was made in Boston in 1946 by Dr. E. A. Whitford, of the University of Wisconsin, who reported that a great part of the infra-red spectrum of stars, long neglected because there had been no sufficiently sensitive detectors of radiation, could now be studied with the aid of a lead sulphide photo-conductive cell developed during the Second World War at the North-Western University. The cell, he declared, was sensitive out to a region whose wavelength is five or six times that of yellow light and two or three times that of useful infra-red photographic plates. Dr. Whitford described at the time how infra-red light had already been used to see the dim outlines of a distant nucleus which, though known for many years to exist, had always been invisible because of the inter-stellar dust-clouds that blot out the ordinary light emitted by it. A lead sulphide cell is sensitive to light over such distances that the astronomers are now permitted the sight of hidden details of the Milky Way and even remoter galaxies.

The pictures on this page are among the latest to be taken at Mount Palomar and Mount Wilson, and two of them from Mount Palomar's Hale Observatory are truly astonishing in the degree of penetration which they reveal. Some confusion often arises with regard to the use of the word "billion" in relation to stellar distances, and it should be explained that the French and American system of numeration takes a billion as 1,000,000,000. In the English system a billion connotes 1,000,000,000,000.

A NEBULOSITY IN THE CONSTELLATION OF MONOCERUS, A CHAOTIC MASS OF GAS AND DUST WHICH IS RECKONED TO BE 1,000 LIGHT-YEARS AWAY, OR 6,000,000,000,000,000 MILES FROM THE EARTH: This photograph was taken with the aid of the giant telescope which has been installed in the new observatory of Mount Palomar, at a height of 5,600 ft., in the mountains of California. This 200-in. Cassegrain telescope, the largest of its kind in the world, is able to probe space to a distance of 1,000,000,000 light-years, and, needless to say, extends far beyond the previous limits of observation. The background against which the "cone" is silhouetted is lighted by a group of stars embedded in it, with most of the illumination coming from a star seen above and slightly to the right of the "cone." This star is about 10,000 times as bright as our sun. The rings around the stars are "halation circles" caused by light which reflected from the back of the photographic plate.



A BARRED SPIRAL NEBULA, N.G.C. 1300, PHOTOGRAPHED WITH THE 200-IN. HALE TELESCOPE OF THE PALOMAR OBSERVATORY: It is one of several photographs released by the Mount Wilson and Palomar Observatories. This extra-galactic nebula, an enormous system of stars and other celestial material, is some 10,000,000 light-years from the earth and is located in the constellation of Eridanus. Its brightest stars are about 80,000 times as bright as our sun. N.G.C. 1300 is known as a barred spiral because its spiralling arms spring from the ends of a bar of luminosity which runs through its bright nucleus. Barred spirals are about one-third to one-half as numerous as normal spirals, whose arms emerge directly from their nuclei. An example of a normal spiral is the Milky Way. Reasons for differences in spirals have not yet been established.



THE PLANET SATURN AND ITS RING SYSTEM: This view has been taken with the 100-in. Hooker telescope of Mount Wilson

KEEPING THE "FREEDOM GATE" BRIDGE OPEN IN KOREA: On the left is the bridge across the Imjin River between the United Nations truce camp at Munsan and the site of the truce conference at Panmunjom. Ice-floes on the river had threatened the bridge and it was closed to all traffic while American engineers, who set off a heavy charge of high-explosives, broke the jam temporarily. The great pressure of ice against the spans will remain a menace until the thaw.

ON ASIAN BATTLEFRONTS

PICTURES FROM KOREA AND MALAYA

NAVAL FORCES OF THE UNITED NATIONS PATROL THE KOREAN COASTS: In a sea littered with ice-floes, a United States rocket ship comes alongside H.M.S. *Mounts Bay* during operations off the coast of West Korea. Rear-Admiral George C. Dyer, of the U.S. Navy, is in command of the United Nations Naval Forces which deny the Korean Communists control of the islands off both coasts of Korea. Many of the islands are close to the mainland and in some cases joined by mudbanks which can be crossed on foot at low water. Others are only a short distance offshore and well within range of shore batteries, which have been increasingly active. The warships of Britain, America, New Zealand, Canada and the Netherlands take part in the patrols, and small patrol craft of the South Korean Navy and small landing craft manned by U.S. seamen, men of the Commonwealth and marines patrol the shallow waters wherever the larger ships cannot go. During the night darkness has been turned into light by the use of star-shells fired from destroyers and cruisers to stop under-cover attacks by the Communists.

HELICOPTER OPERATIONS IN MALAYA: These young members of the Cameronians with their dog had been trailing bandits through heavy jungle and swamps of Kuala Selangor and were evacuated by one of the helicopters used increasingly in Malaya in the difficult operations against the elusive jungle terrorists. Helicopters, dropping neatly into tiny jungle clearings in areas where no orthodox aircraft could find a landing-place, are of immense value in these operations, rescuing wounded troopers and evacuating patrols when their searches have ended.

THE BUDGET AND THE MOTORIST

Only the Owners of High-powered Cars Were Smiling the Morning After

By "THE SPHERE" MOTORING CORRESPONDENT

YOU can usually rely on the wretched motorist being soaked in any Budget by any Chancellor. Mr. Butler ran true to Exchequer form, with the result that motoring has become even more expensive.

Sevenpence-halfpenny extra on a gallon of petrol is a lot of money. It brings the actual tax on a single gallon of petrol up to 2s. 6d. In 1938 it was only 8d., with petrol at 1s. 6½d. a gallon. The duty was increased from 9d. to 1s. 6d. in the 1950 Budget and by another 4½d. in the 1951 Budget.

Since June 1949 there have been ten increases in the retail price of petrol, and it is small consolation to realise that motor spirit still costs less in England than in many Continental countries.

It was expected that the Chancellor would sweep away the old, unfair discrimination against owners of big old cars in the matter of the annual road tax, but in spite of on-the-target forecasts, the increase from £10 to £12 10s. in the overall flat rate came as an unpleasant shock.

The only motorists who were smiling on the "morning after" were owners of high-powered cars licensed before January 1, 1947. Take the case of a 25-h.p. pre-war car. For years its owner has had to pay a tax of £31 5s. per annum, on the basis of 25s. per horse-power.

The man down the road with a new 30-h.p. Rolls has been paying only £10 a year. Very unfair, that, and it was high time the matter was put right.

Let us now take our minds off this unpleasant business of rising motoring costs and turn to a more agreeable side of the subject: motor sport. In spite of the rather confused position regarding the racing formulæ, it's going to be an exciting season, with British cars and drivers playing a prominent part.

The accent will be on Formula 2 racing for 2-litre, unsupercharged cars. Although the new Formula 1—for cars of 750-cc. supercharged or 2½-litres unblown—does not come into force until 1954, there will not be many major events for the present Formula 1 cars (1½ litres supercharged, or 4½ litres unblown) either this year or next.

This means that the poor old B.R.M. may get very little chance of proving itself after all. It will not get many really top-notch races, and its opposition in those races may not be very formidable. The Ferrari 4½-litre cars may be racing again, but their old rivals, the Alfa-Romeos, may not run this year.

If neither the Ferrari nor Alfa teams were put into the field this year, the B.R.M. would not bring much glory to Britain, even if it won its races. So let us hope that the Ferraris, at least, will be up and doing. Most of the major events in France this season will be for Formula 2 cars, but to the great relief of the B.R.M. Trust the Belgian Automobile Club have decided that their race at Spa on June 22—it is the Grand Prix of Europe—shall be for Formula 1 cars. It will be the B.R.M.'s big chance.

There will probably be two B.R.M.s in this race, with young Stirling Moss, British champion, and the experienced Argentinian, Juan Fangio, 1951 world champion, as the drivers. Neither of these brilliant pilots had actually signed up for B.R.M. at the time of writing, but it looked reasonably certain that they would do so.

It depended mainly on what they think of the car in tests in England and at the high-speed track at Monza, in Italy. Neither of these top-grade professional drivers would take on the B.R.M. if they found that the improvements on which the B.R.M. people have been working during the winter had failed to eliminate the faults discovered in the thorough try-out the car received at Monza last autumn.

These weaknesses mainly concerned its cornering characteristics. Moss, who did most of the driving at Monza, found that whereas the B.R.M. was faster than either the Alfa or Ferrari on the straight, it lost time on corners. Raymond Mays and Peter Berthon, the B.R.M. technicians who have had the responsibility of putting things right, say the car will be well-nigh perfect.

The continued optimism and enthusiasm of these two men in the face of devastating criticism and heartbreaking set-backs has been one of the most remarkable features of post-war racing in Britain. Let us hope that 1952 will prove them right.

At the moment, it looks as if the B.R.M.'s most important race in Britain may be a Formula Libre—free for all—event at Boreham, Chelmsford, on Saturday, August 2. Considerable improvements are being made to the three-mile aerodrome circuit at Boreham. The track has been taken over by a new British motor-racing organisation which hopes to develop it in a big way for car and motor-cycle racing.

The August 2 event will be an international meeting, and the main race is being kept open to racing cars of any size, in order to cater for both the B.R.M. and any other Formula 1 cars, and also the Formula 2 cars that will be so prominent this year. In addition to a big prize for the outright winner of this race, there will be a special one for the first Formula 2 car to finish the race.

This and other car-race meetings at Boreham will again be organised by the West Essex Car Club, while the Chelmsford Auto Club will look after motor-cycle racing there. The season's racing at Boreham will reach its peak at the August Bank Holiday week-end, when, in addition to the international car meeting on the Saturday, there will be an international motor-cycle meeting on the Monday.

Boreham may well become "London's own" motor-racing track. It is only thirty miles away and can be approached, from London, by three different routes. It is also easy of access from the north and north-west.

Another popular motor-racing track not far from London is the Goodwood circuit, on which the Duke of Richmond and Gordon has spent a lot more money this winter. There are now terraced banks in all enclosures, more concrete crash barriers have been put up and a permanent bend or chicane has been introduced just after Woodcote corner to slow down the cars as they approach the pits. Up to now the fast cars have shown a tendency to "drift" rather dangerously on taking the former slight left-handed bend just before the pits.

The Goodwood season opens on Easter Monday, April 14, with a programme which includes an international race for the Richmond Trophy. This is a race for Formula 1 cars. I wonder if the B.R.M. will take the chance of a preliminary canter?

Racing at Goodwood is promoted by the British Automobile Racing Club, who announce that they have fixed up a novel race for Saturday, August 16, with the *News of the World* as sponsors. It is a nine-hours international race for sports cars, starting at 3 p.m. and finishing at midnight, so the last few hours will be raced in the dark. It will be the first time that such an event has been staged in England.

Another big meeting will be the British Racing Drivers' Club meeting at Silverstone, which they have taken over from the R.A.C. The date is Saturday, May 10, and it will again be sponsored by the *Daily Express*. The main race will be for Formula 2 cars, and we should see an exciting battle between a strong contingent of Continental cars and Britain's H.W.M., Alta, E.R.A. (with Bristol engine), Connaught, Cooper (also with a Bristol engine) and Kieft. The H.W.M., which has done so well in the last three seasons, has been improved and should do even better this year.

Space is running short, so let me deal quickly with the rest of the motoring news and developments. . . . Presentation of the Dewar Trophy to Mr. William Lyons, of Jaguar Cars, was a brilliant affair, with cine cameras whirring and arc lamps blazing. The R.A.C. were admirable hosts. They always do that sort of thing very well.

The Dewar Trophy is awarded annually for the year's outstanding technical and engineering achievement in motoring. Bill Lyons got it for the way his sports Jaguars performed in a wide range of races and rallies. His most notable success, of course, was victory in the 24-hour race at Le Mans with an XK120C.

There will be eighteen British cars out of sixty in this year's Le Mans race: five Aston-Martins, four Jaguars, two Allards, two Healeys, two Jowetts, two Frazer-Nashes and a Singer. There were 137 applications.

The R.A.C.'s Second International Rally.—This will be at the end of this month and it is being sponsored by the *Daily Telegraph*. 249 applications have been accepted. There will be a number of foreign drivers, including Dr. A. Angelvin, of Marseilles, who was third (in a French Simca) in this year's Monte Carlo Rally.

The rally starts on March 31: 111 cars will start from Hastings and 138 from Scarborough, which will also be the finishing-point after the cars have travelled 1,800 miles, with a speed test at Silverstone, a manœuvrability test at Castle Combe and a timed run up the "Rest and Be Thankful."

Changes are announced by two British car firms: Rover and Armstrong-Siddeley. The Rover 75's displayed at the Montreal and Geneva shows had a new front end and a modified boot. The old radiator grille, with horizontal bars and a fog lamp in the middle—like a Cyclops eye—has been replaced by one with narrow vertical bars and the lamp has gone. The locker now has a clear floor, there being a separate compartment below it for the spare wheel. Armstrong-Siddeley now have a six-light version of their Whitley saloon, with more leg-room for the rear passengers and an improved field of vision. The new model replaces the six-light Lancaster saloon. The four-light Whitley will continue in production.

FROM BRADFORD TO CAPE TOWN—A NEW RECORD IS SET UP BY A HILLMAN MINX: *On left*—Bearded Mr. G. C. Hinchliffe arriving at Cape Town after his record-breaking run from England, is greeted by a representative of the Rootes Group. *On right*—Mr. A. D. Rootes, Sales Manager Humber Limited, greets Mr. Hinchliffe and his co-driver, Mr. James Bulman, at Southampton on their return home. The journey across Africa to the Cape was accomplished in 21 days, 19 hours and 45 mins., breaking the previous record by 2 days, 5 hours and 5 mins.

TWO INCIDENTS IN A GRUELLING JOURNEY THROUGH JUNGLE AND DESERT: *On left*—The record-breaking Hillman Minx crossing the Sahara Desert, where on many occasions the only means of traction was by putting lengths of wire mesh under the wheels. *On right*—After leaving the Congo Ferry the Hillman struggles through the shallows to dry land. Difficulties like these pulled down the average speed, which had to be made up on every possible opportunity.

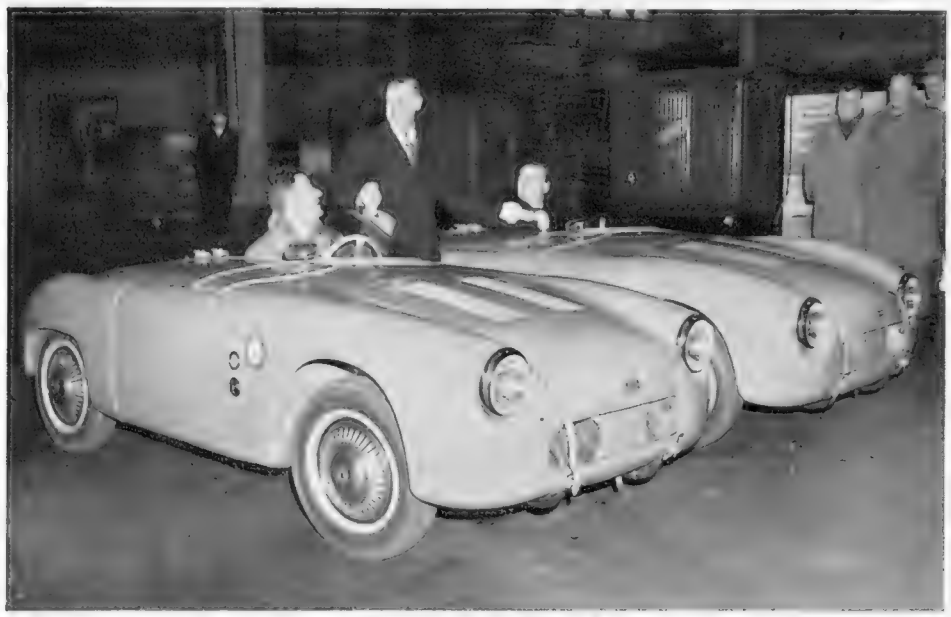
A BRITISH EXHIBIT AT THE SWISS MOTOR SHOW, WHICH OPENED ON MARCH 20: This is the 1952 version of the Rover 75 Saloon. It reveals no major changes since the completely re-designed car was introduced in September 1949, although a changed frontal appearance is immediately apparent. The wide horizontal louvres of the 1951 model have been replaced by a new radiator grille, which has narrow vertical slats, and the Cyclops eye head-lamp previously housed centrally in the front of the grille has been removed from the car altogether.

THE PLASTIC CAR

AND NEW DEVELOPMENTS OF INTEREST TO MOTORISTS

A BRITISH CAR WITH A PLASTIC BODY : The 1946 model in the foreground has done 41,000 miles and shows no sign of warping or discoloration. Behind is a new Vauxhall Wyvern of normal steel construction. A firm of coachbuilders in the Midlands has been experimenting with plastic car bodies since 1937 and is now ready to start production. Of the five cars tested, that shown above is still in perfect condition after five years of normal use. Another, nine years old, has done 85,000 miles and has been left out night and day in all weathers without damage to the plastic. Costs would be considerably reduced if the plastic body is used and petrol consumption would be reduced owing to the lightness of material. Other advantages are the much reduced cost of "tooling up"—estimated at £10,000 instead of about £280,000 for steel cars; and the fact that unskilled labour could be used to a greater extent in the process of manufacturing. Supplies of resin for the plastic are readily available. Plastic bodies are already in production in America and in East Germany, where 2,000 plastic cars have already been made this year. The new method of body construction opens up new possibilities for a genuine "people's car," at a reasonable price.

AN AMERICAN MODEL IN PLASTIC : Dr. Earle S. Ebers shows his sports car with a plastic body, after a cross-country run in Philadelphia. The car was displayed at the fourth National Plastics Exposition. Dr. Ebers is sales manager of the Naugatuck Chemical Division of the United States Rubber Company, which makes Vibrin Polyester plastic. This plastic is combined with layers of glass fibre in making the material for the plastic car body. The body is claimed to be dent-proof and rust-proof, and will sell for about £230. It is being produced by the Glasspar Company of Costa Mesa, in California, for mounting on any type of car chassis. It is moulded in one piece. The plastic is about ¼-in. thick and the body weighs only 185 lb.



FRENCH RACING CARS FOR AN AMERICAN GRAND PRIX : René Bonnet brought two Deutsch-Bonnet cars over on the *Ile de France* for the Florida Grand Prix of Endurance. He is seen at the driving wheel of the car on the left, on arrival at Pier 88, New York. In the centre is Alec Ulmann, chief steward of the race, who greeted the French entrants, and right is Hobart Cook, who drove the second car in the twelve-hours race.

A NON-HYDRAULIC CAR-TABLE : This German invention costs only £30 and was shown at this year's Frankfurt Fair. The see-saw car-table was invented by Kurt Georg, of Kassel, and obviates inspection pits and expensive hydraulic lifts. The car is simply driven on to the platform until one end tips. Height from the ground at the elevated end is 4 ft. The lift has a load capacity of 1½ tons and can be adjusted to take different track widths of large or small vehicles.

SUPER-STREAMLINING IN A GERMAN CAR : *Above* and *right*—Front and rear views of the car built by Rudolf Haller, of Munich, an aircraft and speedboat builder. It is driven by a 40-h.p. Porsche engine. Haller claims that it will do 125 m.p.h. It has cost about £1,800, and gadgets include a compass, altimeter, thermometer and a cocktail bar.

The World of Books—By VERNON FANE

HUGH WALPOLE, THE PROLIFIC

A Skilful Biography of a Distinguished and Unflagging Personality in the Realm of Fiction-writing

SIR HUGH WALPOLE once told me that he thought that one of his contemporaries (it was Henry Handel Richardson) was a novelist's novelist : quite a sound judgment. HUGH WALPOLE, by Rupert Hart-Davis (Macmillan. 25s.), is largely a writer's biography. For Hugh Walpole's whole existence was writing. In addition to the formidable list of his published works, he ran the Book Society ; contributed a vast output to periodicals, in lectures and in speeches of all sorts on aspects of his craft and, in addition, he kept voluminous journals and diaries as well as maintaining an enormous correspondence, all of which was written in his own hand. The journals, diaries and a lot of the correspondence has been drawn upon extensively by Mr. Hart-Davis to make a fascinating study of one of the most interesting literary figures of his generation.

More than anything he wanted to be a great romantic novelist, and by the irony of fate it is the books outside that *genre* with which he is most likely to be remembered. Almost hysterically sensitive to criticism, his journals reveal that he also practised self-criticism to a painfully ingenuous degree. He finds little meannesses within himself where none in fact existed, for he was one of the most generous of men, as very many worthy and unworthy folk can testify. He had a great zest for life, but kept on having to tell himself that he was enjoying it. He had a great many devoted friends of whom he used to make lists every now and again and move them up and down in order of precedence, for all the world as if he were in the fifth form of St. Hilda's. He never married and, like many an essentially lonely man, he demanded and received the utmost devotion from the exiguous list of his intimates.

From a personal friendship over the last years of Hugh Walpole's life, and from a mass of detail and through years of work, Mr. Rupert Hart-Davis has produced a very readable biography of a most interesting man of his day.

In a further book about G. K. Chesterton, designed primarily for those readers who can never have enough of him, Maisie Ward has collected a great number of unrelated incidents, anecdotes and poems which share at least the common denominator of his great fondness for children, his humour and his profound faith in his religion. RETURN TO CHESTERTON (Sheed and Ward. 21s.) has something of the nature of a miscellany, since it has been formed from the reaction of scores of people to the earlier book, and is far from being a straightforward biography. In these pages you will find accounts of G.K.C. and the fun he had with a group of children at Lyme Regis ; G.K.C. making a significant farewell gesture to friends a short time before his death ; G.K.C. acting in a Beaconsfield theatrical company ; and G.K.C. howling "like a werewolf" to have his tie tied. This book is, in fact and in intention, a sincere tribute to him.

Queen Victoria's signature phrase, as it were, has become her childish speech : "I will be good," but in later years she herself denied having said it, and it was only her old governess, Lehzen, who recorded it or said that she remembered it. Whether Lehzen's memory was better than the Queen's we shall never know, but the simple sentence, supposed to have been uttered when she realised after a good look at the genealogical tree how near the Throne she was, remains as indicative of her character and her purpose. Nevertheless, Victoria as a child had her share and more of naughtiness and tantrums, and was not above a screaming, stamping rage if she was thwarted in one of her little plans.

THE YOUTHFUL QUEEN VICTORIA (Macmillan. 30s.) is Miss Dormer Creston's "Discursive Narrative" of the early years of the Queen-to-be at Kensington Palace, and later, in the two-and-a-half years on the Throne before her marriage to Albert. It is a fascinating recital, informed, and easy in style.

Almost 300 years ago there took place the Salem trial of witches, which set the whole of Massachusetts on edge, and which caused a calamitous upset in the history of seventeenth-century New England. Marion L. Starkey has written a modern inquiry into these trials, a volume that I hope you will find as fascinating as I did, and which clears up some of the legendary activities of the judges, the accused women and, particularly, the incriminating but often false evidence of the witnesses. THE DEVIL IN MASSACHUSETTS (Robert Hale. 18s.) describes how the women suspected of being witches were betrayed and abandoned by their own husbands and families and how, in most instances, their "confessions" were made in desperation and in certainty of death. The author points out

HIS MEMOIRS ARE RECORDED ON CANVAS : Kees van Dongen, the veteran Dutch painter who achieved fame in Montmartre in the early years of the century, seen beside one of the canvases which he has been displaying in the Petrides Gallery in Paris, and which he chooses to call his memoirs. Some of his paintings are of fashionable Deauville ; many of them take a backward glance to personalities who loomed large in the days of his youth.

that the tragedy of the witch hunt originated in the childish fantasies of some little girls, "inflamed by the terrors of Calvinism as their immature minds understood it," and that they found relief from their tensions in an emotional orgy which eventually engulfed the whole Massachusetts Bay Colony.

One doesn't have to be a scientist, a fisherman, an animal lover or a marine zoologist in order to appreciate and enjoy Dr. N. J. Berrill's book THE LIVING TIDE (Gollancz. 16s. 6d.), though he is all of these things. He is also a writer of considerable charm and gaiety and, unexpectedly, his book about sea life is as amusing as it is informative. Dr. Berrill, who is English but now holds a university appointment in Canada, tells us that the California oyster, "like the Chamber of Commerce, doesn't know when to stop," that seals are humorists and very adaptable, and that if a sea-otter catches a really good meal, it finishes it by licking its fingers to get the last delectable taste. Dr. Berrill also tells us a good deal about squids, and about the relative speeds of fish in the water (they are quite nippy off the coast of Florida, but slow up off the coast of Maine). As you may have gathered, I thoroughly enjoyed the book.

Miss Ardyth Kennelly has written a novel, and an excellent one, about the assassination of Abraham Lincoln, principally from the point of view of that good-looking young actor, John Wilkes Booth, who shot him during a performance of *Our American Cousin* at a Washington theatre. THE SPUR (Gollancz. 12s. 6d.) is the least banal reconstruction of the crime and the criminal's pursuit that I have yet read, full of sound common sense of the kind sometimes known as homespun, and with not a single cliché that I could detect. It is refreshing to observe that Miss Kennelly's style has no obvious derivation, and that her originality is as much a fact as her crispness of dialogue or her sense of character drawing. Booth, for instance, is shown as a far from sordid figure, and his young companion, David Herold, a frightened but loyal boy who, after Booth was shot, was executed with three others. The story is told on two levels : an account of the shooting, the escape and the chase, and a series of flashbacks to Booth's boyhood, but there is nothing spasmodic or disrupted about this treatment and, by the end, the reader has a clearer picture than he may ever have had before of a world-shaking event.

PATHWAY TO THE STARS (Peter Davies. 12s. 6d.) is a very different kind of historical novel, although it, too, deals with an aspect of United States history. But Mr. Harnett T. Kane's book is frankly romantic, and his story of New Orleans in the first decades of the nineteenth century is both lush and highly coloured. The principal figure is one John McDonogh, from Baltimore, who came to be a great landowner in the South and on whose extraordinary career this narrative is based. He was a man of enormous ambition, but after the bitter ending of a love-affair he withdrew from all but business life, was jeered at as a miser and a skinflint and surprised the city by leaving a will in which his big fortune was given to further education.

Archbishop David Mathew, whose new novel deals with a group of English people in post-war Florence, writes with an urbanity that is a real joy to the reader, an ease of manner that conceals a depth of insight and an acute understanding. IN VALLOMBROSA (Collins. 10s. 6d.) treats of a man whose life has disappointed and often bewildered him, and who has arrived at late middle-age with a greater degree of disillusion than makes for a tolerable life. As the story opens, he is to marry a widow lady of considerable means, who looks forward to taking care of his delicate health and making him quietly happy. She is all definition ; he, all doubt, and the marriage cannot be forecast as an assured success. Archbishop Mathew handles the problem with a cool grace and with a realisation, though not necessarily with an approval, of worldly values.

THE OTHER HALF OF THE PLANET (Heinemann. 12s. 6d.) is as wonderfully entertaining as the Jules Verne and the early Wells which thrilled us in childhood, and it is written in the modern idiom, which in its crispness is excellently suited to such a tale. I was reflecting, after reading it, that there are very few indeed of such imaginative adventure books as this being produced at the present moment, and regretting it, both for people of my own age and for the young. Mr. Paul Capon certainly knows how to tell a story which carries one rapidly from page to page, and which makes one digest such items as spaceships, and queer civilisations on a planet the other side of the sun.

THE GOSPEL ACCORDING TO MOSHEH OVED

An Autobiography of Pace and Power

It is at first hard to know what to make of Mosheh Oved's VISIONS AND JEWELS (Faber. 21s.), for these pages of autobiography are the deeply-felt outpourings of a Zionist who is bound by no literary conventions and to whom time, place, facts and figures are seemingly unessentials which may or may not be included as feeling dictates. This story of the son of a ritual slaughterer in a small Jewish community in Poland, who ran away to England as a boy, and who now presides over his wares in a Bloomsbury jewellery shop of some fame, has pace and power. Its cadences are almost Biblical at times, its philosophy is rich and strange, its allegories betoken, even in the midst of everyday business, a noble pre-occupation with the things of the spirit. Of the many remarkable men who have crossed the threshold of Mosheh Oved's shop, the most remarkable perhaps was old Ben Eli, a London Autolycus, a picker up of unconsidered trifles, who knew the London public-houses and their habituées, and the pedigree of every prominent thief in town. At once fantastic and romantic he would have been suffocated in the narrow environs of realism and truth, or would have rotted away long ago by his filthy mode of life, we are told, had he not "now and again deliberately lost himself, whilst telling of facts, and instead run on, telling of things which neither stood nor flew, dragging his audience with him by the first lustrous glance of his eyes." Mosheh Oved runs on, too ; that is his way. But it is often a delightful and beguiling way, and behind it all looms a rare personality, to whom many mysteries have surely been unfolded, in a life marked by stress from its outset and gladdened by many friendships.

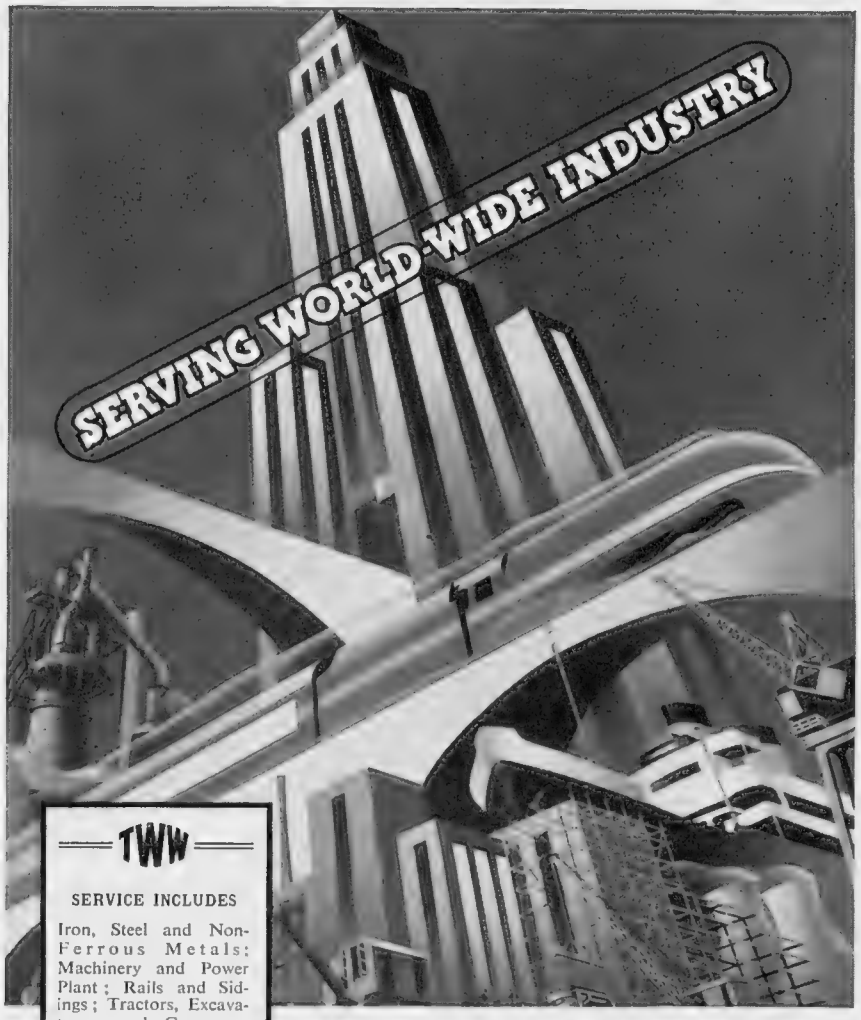
Eastern and Western Europe can be likened to the giant-stems of an ancient tree. Never has the divergence between these stems been more pronounced than it is to-day ; so much so indeed that we are liable to lose sight of the fact that those stems have their common root in Greece. In THE ROOT OF EUROPE (distributed by Chatto and Windus for the *Geographical Magazine* and published at 15s.), Michael Huxley has brought together a number of distinguished and scholarly writers who endeavour to show the diffusion of Greek culture through the centuries. Dr. R. W. Moore, the Headmaster of Harrow, shows the origins of Greek influence ; Dr. C. H. V. Sutherland writes on "Greece in Rome" ; H. St. L. B. Moss on "Greece and the Early Medieval 'West'" ; Dr. Sherwood Taylor on "The Moslem Carriers" ; and Steven Runciman on "Byzantium and the East." It is a truly admirable symposium, summing up the Grecian legacy to the world at a moment when it is hard to believe in common origins amid so much sharp and so much unhappy division.

The New Naturalist Library has now a score or more of volumes, a monument to the erudition of James Fisher and his fellow editors. The latest volume is BRITISH MAMMALS (Collins. 25s.), by L. Harrison Matthews. The author is a general naturalist of wide experience, and here he has done what British natural history has wanted for half a century—he has written a synthesis of our knowledge of mammals, and he shows what a revolution there has been in our knowledge. His notes on the bat are of special importance, dealing at length with the breeding cycle of these extraordinary creatures, with their curious problems of delayed fertilisation and delayed implantation. Dr. Matthews gives a most lucid exposition of how bats navigate in the dark by means of echo-sounding. Undoubtedly this book will stimulate a revival of British mammalogy.

George Savage, who combines the experience acquired as a dealer in ceramics with a vast fund of academic knowledge and an ability to set that knowledge down on paper, is the author of EIGHTEENTH-CENTURY ENGLISH PORCELAIN (Rocklif Publishing Corporation. 50s.). He deals at length, and with a wealth of illustration to aid him, with what was really the golden age of English porcelain. Above all, he gives a very thorough consideration to the question of scientific aids to the identification of porcelain, most notably infra-red rays. The appendices to this fine volume include the Chelsea Catalogue of 1756, which is reprinted in full.

Another equally elaborate volume, but on a very different theme, is A HISTORY OF GOLF IN BRITAIN (Cassell and Co. 42s.), which includes among its important contributors Bernard Darwin, Henry Cotton, Henry Longhurst, Leonard Crawley, Enid Wilson and Lord Brabazon of Tara. Beyond doubt it is a classic in the literature of golf, sure of a place in every library in the land and surely deserving a place in every golf club. The chapters on the early history and implements of the game make particularly good reading.

BRITISH FLOWERS IN COLOUR (Odhams. 21s.) is a handsome, new illustrated volume which, in common with several other publications noted this week, has a number of contributors. These include Robert Gathorne-Hardy and Iolo Williams. The volume has sixty-four pages reproduced in full colour



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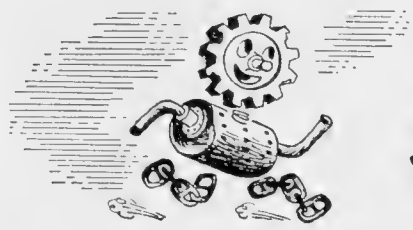


SPEED THE STEEL

Issued for the STEEL SCRAP DRIVE by the
British Iron and Steel Federation, Steel House, Tothill Street, London, S.W.1

S.22

STEEL, THE VITAL METAL

(*Concluded from page* 467)

been taken to paint the insides of the shops in colours restful to the eyes of the men working in them. The new Abbey works are also strikingly and spaciously designed. It is becoming increasingly common for steel workers to drive to the plant in their own motor-cars and in their best suits.

The steel worker had always to be skilled in knowing the state of his metal from its appearance, but to his old abilities new operating skills have now been added. He ranks among the highest-paid of manual workers; the normal pay packet of a steel worker holds between £8 and £9 a week, averaged over men and youths, and not a few of the first hands have an annual income running into four figures. This is achieved by good teamwork and by incentives. Steelmaking is work that must be done by teams of men each doing his part smoothly at the right time, and a sense of corporate honour is thereby developed; and datal or basic wages are increased by output bonuses giving hard work a high reward.

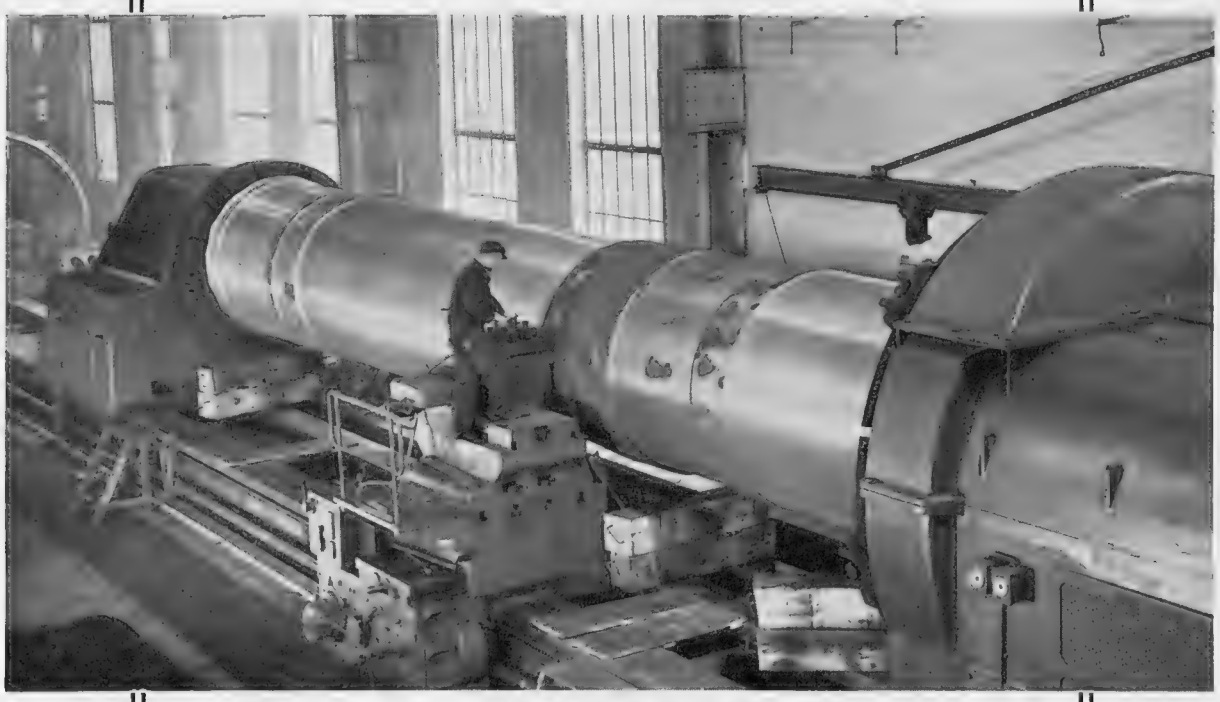
COILED RODS COOLING ON A LONG CONVEYER LINE: They are being taken on this conveyer, which lies open to the air, to an inspection station in the Rod Mill of the Columbia Steel Company of California. These rods will be further processed into wire, wire rope, nails, fencing and other materials.

ALLOY STEEL IN PROCESS OF MANUFACTURE FOR THE AIRCRAFT INDUSTRY: This is seen in process of being tapped from an electric furnace at the South Chicago works of United States Steel. One of the advantages of the electric method is that the temperature is under closer control than in the open-hearth method.

The United Kingdom now ranks only third among the world's producers of steel, the British record output of 16,293,000 tons in 1950 being far exceeded by the United States with 86,352,000 tons and the Soviet Union with 26,870,000 tons; and German production is again approaching our own. But Great Britain has been responsible for nearly all the fundamental developments in iron and steel-making in modern times.

The main landmarks in the history of the industry are Darby's use of coke instead of charcoal (about 1730), Huntsman's crucible steel (1740), Cort's grooved rolling mill (1783), Naysmith's steam hammer (1838), the Bessemer converter (1856), the Siemens open-hearth furnace (1862), the Gilchrist-Thomas basic process (1878), Hadfield's manganese steel (1883), and the continuous strip mill, and all but the last are British. No other country has made such a contribution to the industry, and although for a time we appeared to have lost the technical lead to the United States, the British industry is to-day as efficient and as enterprising as any in the world.

STEELMAKERS and ENGINEERS



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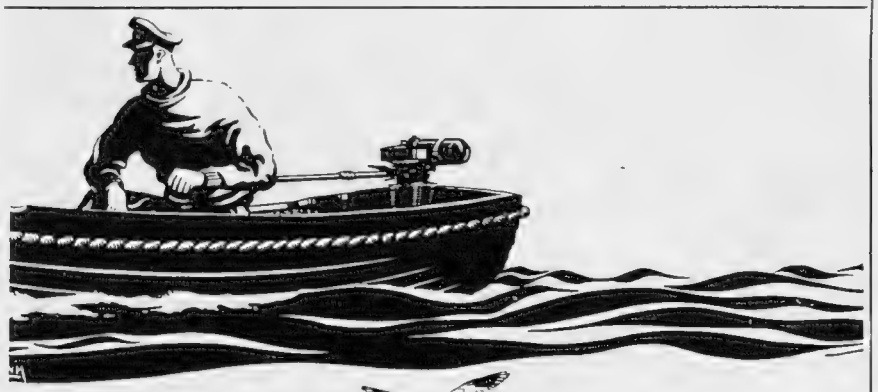

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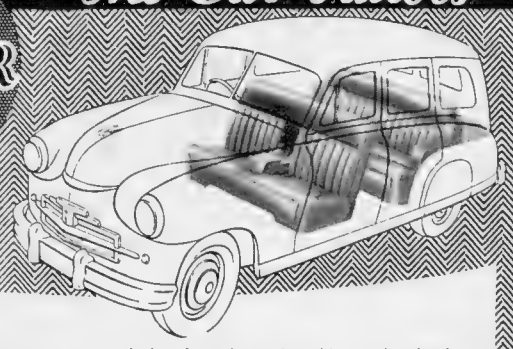

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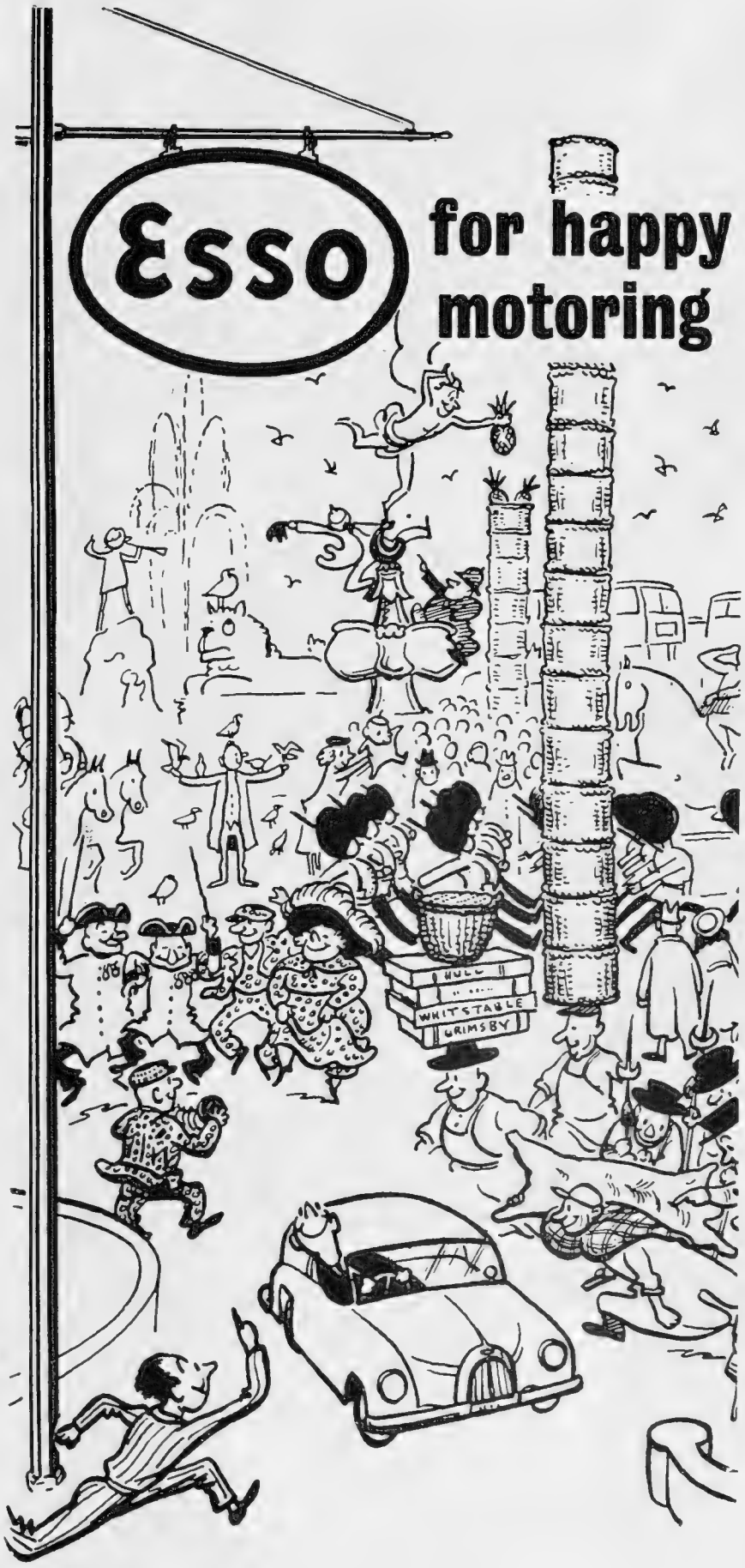

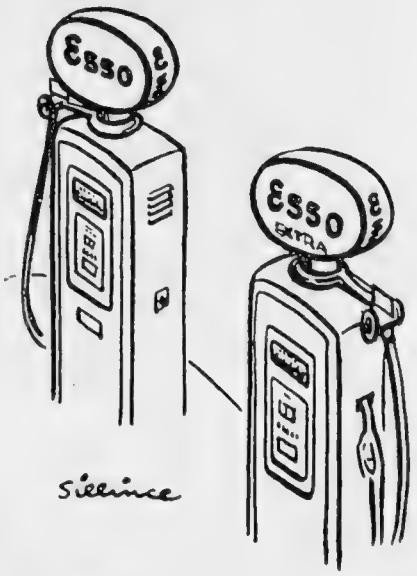

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The tour outlined embraces hotels visited by me on my Scottish journeyings in 1951, and does not claim to give a complete picture of Scotland's touristic possibilities. But what it does provide, especially for anyone planning a first motoring tour of Scotland, is a splendid picture of the country's varied scenery, and my personal recommendation of some Scottish hotels.

The mileage covered is approximately 1,200, and can be done comfortably in ten days. I am confident that the route followed will whet the appetite to explore other parts of Scotland, e.g., the rugged Highlands north of the Caledonian Canal, and delightful holiday centres such as Pitlochry or Speyside.

TO get your first breath of Scotland, stay at (1) North Berwick, The Marine Hotel (*Tel.* 406), The Royal (*Tel.* 400), or at that lovely Lutyens-designed house (2) GREYWALLS at GULLANE (*Tel. Gullane* 2144), overlooking Muirfield Golf Course; a good dormy house for (3) Edinburgh, fourteen miles on. For those wishful of staying in Scotland's capital, I suggest The George (*Tel. Central* 6811) as a supreme address, and for comfort on the outskirts, Braid Hills Hotel (*Tel. Edinburgh* 54748). Crossing by the Firth of Forth Ferry, make avidly for (4) ABERDOUR, WOODSIDE HOTEL (*Tel.* 8), for here Mr. and Mrs. L. S. Hillson have such a high regard for food and wine that you may well halt awhile. Continuing on through (5) Perth, will bring you to that gateway to the Highlands (6) DUNKELD HOUSE HOTEL, DUNKELD (*Tel.* 243). Excellent fare, pleasing service and luxury comfort can be experienced at this "Hotel by the River." A lovely base from which to visit Pitlochry and Loch Tay.

Then via Blairgowrie, the road leads to (7) SPITTAL O' GLENSHEE. Here DALMUNZIE HOUSE HOTEL (*Tel. Glenshee* 207) must be your objective, for wonderful views and meals far removed from the ordinary will be your lot. Deeside now beckons and (8) Braemar, Invercauld Arms (*Tel.* 203), is a must. Note also (9) Ballater, Loirston Hotel (*Tel.* 13). At (10) BANCHORY, note RAEMOIR HOTEL (*Tel.* 122). A country house of friendly environment and providing such a wide range of outdoor pursuits that a sample night here will be but the prelude to return. A good base, too, from which to explore the Granite City of (11) Aberdeen.

Northward via Huntly and Elgin will bring you to (12) NAIRN, where you can choose with confidence NEWTON HOUSE HOTEL (*Tel.* 3144), opened last year by ladies of proved experience. Overlooking the golf course, this country house, with its peaceful grounds, provides a happy environment within easy motoring distance of (13) Inverness.

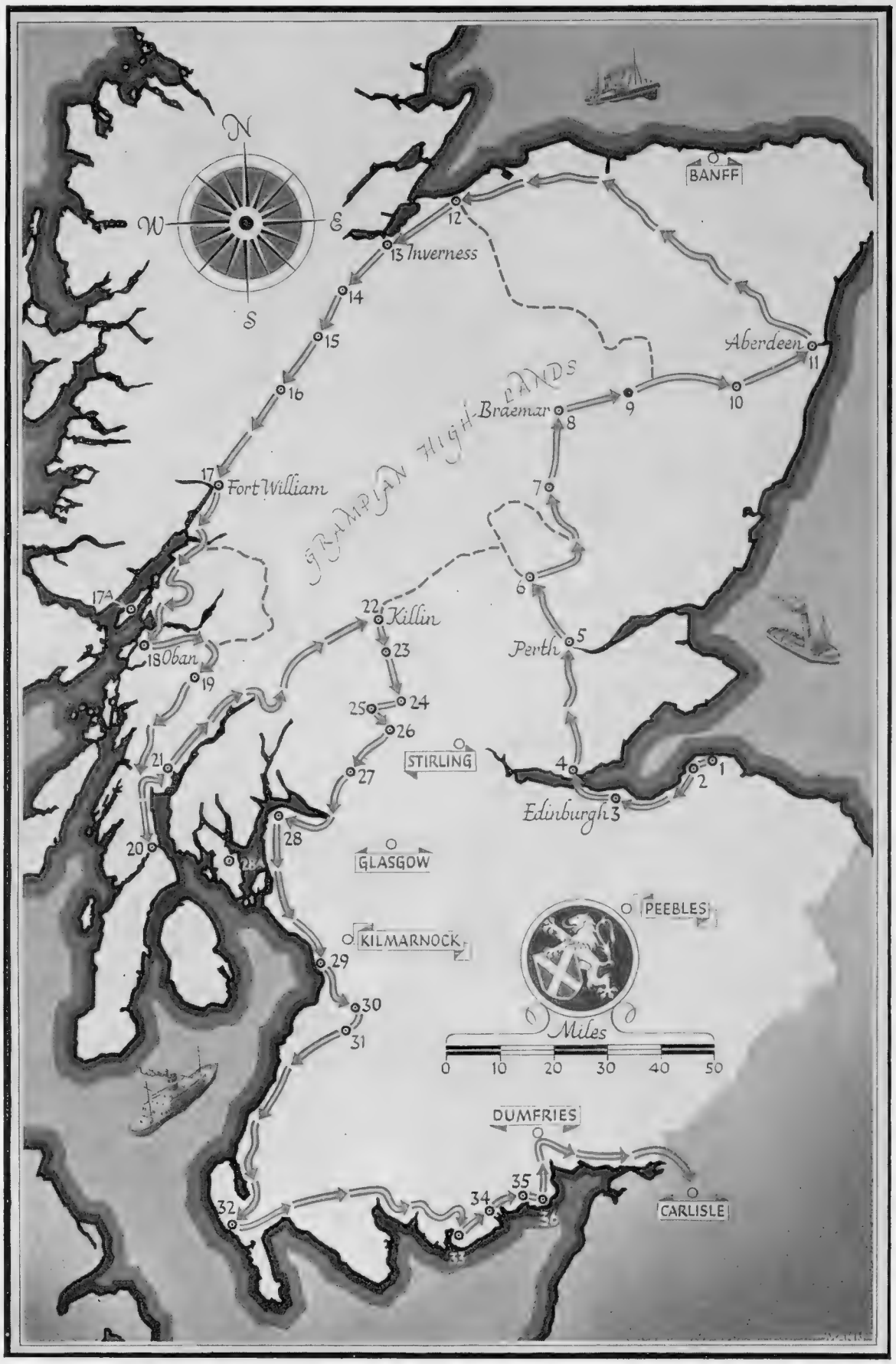
Now the Caledonian Canal Road, one of the most beautiful runs in Scotland, unfolds. Three hotels, set back from the road and immune from the noise of traffic, carry my personal recommendation, (14) near DRUMNADROCHIT, LEWISTON ARMS (*Tel. Drumnadrochit* 225), and mine hosts, Lieut.-Colonel and Mrs. Malcolm. Good fare, cosy comfort and, if you have a mind to stay on, plenty of fishing is to be had. Five miles on will bring you to (15) GLENMORISTON and GLENMORISTON HOTEL (*Tel.* 6); pleasant sounding, good to look upon and happily positioned, with Miss Jean Alexander as hostess and co-proprietor. Then 25 miles from Fort William is (16) INVERGARRY HOTEL (*Tel. Invergarry* 206), one of the friendliest small hotels in Scotland, with Bunty and Leslie Hunt at the helm.

Passing through (17) Fort William, a 20-mile detour can be avoided by crossing the ferry at North Ballachulish for the Pass of Glencoe and Oban. But at DALMALLY, be sure to make a detour southwards to (19) PORTSONACHAN HOTEL (*Tel. Kilchrenan* 224) on the shore of Loch Awe. A well-known fishing hotel where Colonel and Mrs. J. T. Young are true Scottish hosts. In the loch-girt town of (18) Oban, Alexandra Hotel (*Tel.* 2381) is a sound choice. Note also (17a) The Isle of Eriska Hotel, near Connel (*Tel. Ledaig* 205).

Southward brings the motorist to Lochgilphead and to (20) STONEFIELD CASTLE HOTEL, TARBERT (*Tel.* 7), overlooking Loch Fyne. A beautifully-positioned holiday hotel, where days spent are all too short. Note, travelling east along the shores of Loch Fyne, the white-faced (21) Lochgair Hotel (*Tel. Lochgair* 203). At Arrochar turn northward again and proceed via (22) Killin around Loch Tay and turn southward to (23) Lochearnhead Hotel (*Tel. Lochearnhead* 37), (24) Roman Camp Hotel, Callander (*Tel.* 3), or to (25) Trossachs Hotel (*Tel. Trossachs* 32) on the shore of Loch Katrine. Other of my recommended hotels in this area are (26) The Lake Hotel, Port of Menteith (*Tel.* 214), and (27) The Buchanan Arms, Drymen (*Tel.* 310).

Motorists can, if they wish, by-pass Glasgow by the Erskine Ferry. At (28) Gourock, I suggest garaging the car and taking the Clyde steamer over to (28a) GLENBURN HOTEL, ROTHESAY (*Tel.* 500), a self-contained family holiday hotel where several days can be agreeably spent. Returning to Gourock, follow the Clyde southwards to (29) Troon, mecca of golfers and playground for children. Stay at The Marine Hotel (*Tel.* 980) or The Welbeck (*Tel.* 118).

Particularly note near Ayr, on the Cumnock Road, (30) SUNDRUM CASTLE HOTEL, COYLTON (*Tel. Joppa* 53), and (31) HOLLYBUSH HOUSE HOTEL (*Tel. Dalrymple* 214), seven miles south-east of Ayr on the Dalmellington road. Both delightful country hotels and good centres for the "Burns Country." Through Maybole and on to Turnberry hug the coast road and make (32) PORTPATRICK HOTEL (*Tel. Portpatrick* 205) your stopping-place. A first-class seaside hotel where there is a real understanding of good food and wine. Now via Castle Douglas, make for (33) KIRKCUDBRIGHT, SELKIRK ARMS (*Tel.* 2), which, with its attendant farms and gardens, provides a base of character; comfortable and friendly. Note also (34) Baron's Craig Hotel, Rockcliffe (*Tel.* 225) and (35) SOUTHWICK HOUSE HOTEL, DUMFRIES (*Tel. Southwick* 207), a country-house hotel, where you can enjoy Scottish hospitality from a new angle. Make your last stay in Scotland at (36) SOUTHERNESS-ON-SOLWAY, where there is a first-class golf course and a most unusually-designed and named hotel, THE PAUL JONES (*Tel. Kirkbean* 226).



OVER THE HILLS AND FAR AWAY—ASHLEY COURTENAY'S ITINERARY ON HIS 1,200-MILE TRIP THROUGH SCOTLAND: He starts on the east coast at North Berwick and travels north through Edinburgh and Braemar to Nairn, the turning-point of the tour. Then comes the journey south-west to Fort William, and then southwards through Glasgow to the Solway Firth. Each number on the map corresponds with one of the halting-places mentioned in Ashley Courtenay's article.

Two final words of advice. Do try to telephone ahead for meals, and avoid touring in July and August unless you want to risk having the stars for your roof!

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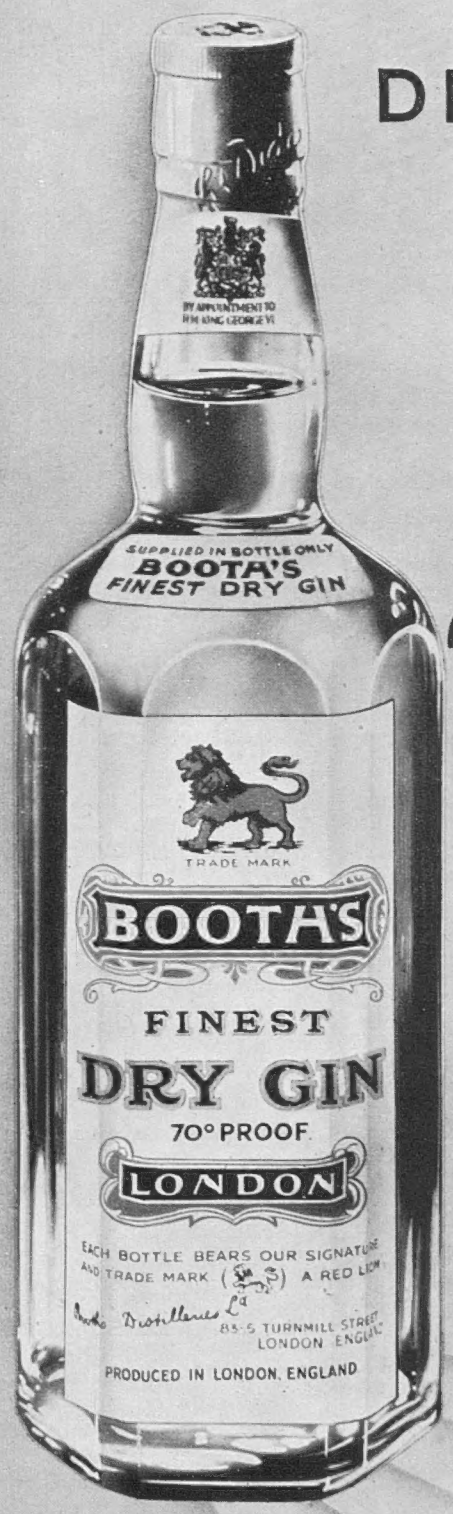

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IN QUEST OF GOOD HOTELS

BY ASHLEY COURTENAY

I HAVE a good deal of sympathy for garden-lovers who are compelled to live in town flats. For the past two-and-a-half years I have had 100 acres to roam over, and when the snowdrop dell had reached its zenith, I was watching for the first primroses . . . and so on through the seasons.

Now, in my 100 square feet of flat, I should feel like a caged lion were it not for the fact that I know of hotels with beautiful gardens where I can continue to witness the ceaseless transformations of nature. Had I the time, I should soon be away to *Polsue Manor Hotel*, Ruan High Lanes, near Truro, in the Roseland Peninsula of Cornwall, where Major Reeve has, in his market garden, a constant crop of new overnight visitors in the shape of spring flowers, which, via Covent Garden, bring many a whiff of Cornish scent to a Londoner's flat. A spring holiday spent down at *Polsue Manor*. What an inviting thought!

And it will soon be daffodil-time in the grounds of *The Elms Hotel* at Abberley, seven miles from Worcester, in the lovely Teme Valley. For a massed display of daffodils, the entrance drive of *The Elms* alone is worth going many miles to see.

Another garden which I hanker to visit in springtime is that of *Langdale Chase Hotel*, which slopes down to the edge of the waters of Lake Windermere. Much loving care is constantly bestowed on the beds and lawns and flowering shrubs, and that reminds me of how abundantly azaleas and rhododendrons bloom in Lakeland. The first occasion on which I realised this was when I was staying at that delightfully furnished and happily situated hotel, *Graythwaite Manor*, at Grange-over-Sands, the Riviera of the north.

Garden-loving and good hotel-keeping often go hand-in-hand. Both require a service of anticipation and watchfulness—and in order to blossom, both require the right diet!

A good example is *White Friars Hotel*, near Hurstmonceaux, in Sussex, where Mr. and Mrs. A. J. Wreford have a harmonious interest in catering for their visitors and in the culture of their garden.

Other somewhat similar illustrations of this point that occur to me are *Moor Court Hotel*, Amberley, in the South Cotswolds; *The Great Tree Hotel* at Chagford, in Devon; and *The Northfield Hotel* at Minehead, in Somerset. For bijou gardens, which are cleverly compact, there are *The Bay Tree* at Burford, in the Cotswolds, and its companion hotel, *The Manor House*, at Moreton-in-Marsh.

This is an appropriate moment to draw the attention of other flat-dwellers to the fact that the objective in visiting an hotel need not necessarily be an interest in its garden. The hotel can well serve as a base from which to view other people's gardens, and in this connection I would mention the admirable work done by the National Gardens Scheme, 57, Lower Belgrave Street, London, S.W.1. whereby private gardens in England and Wales are opened to the public.

Letters, accompanied by a stamped, addressed envelope for reply, should be addressed to Mr. Ashley Courtenay, c/o The Editor, The Sphere, Ingram House, 195 - 198, Strand, London, W.C.2.

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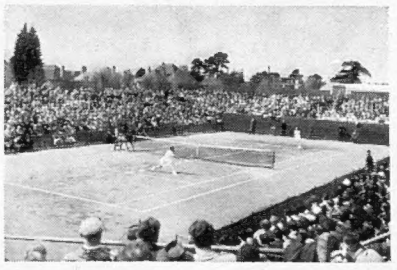

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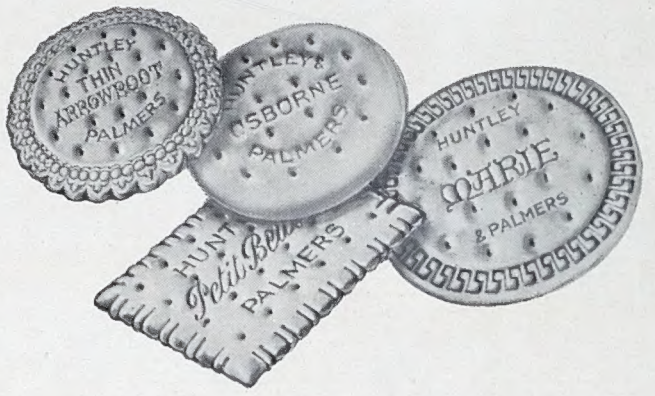

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